

57761

# NATIONAL

Boilers and Radiators



NATIONAL RADIATOR COMPANY





APR 13 '26

# NATIONAL

Boilers AND Radiators



CATALOG

No. 35

**NATIONAL RADIATOR COMPANY**

GROWN FROM A SINGLE FOUNDRY IN 1894...BECAUSE THE CUSTOMER SO DICTATED

GENERAL OFFICES, JOHNSTOWN, PA.

Prices published in this edition supersede all former lists and are subject to change without notice. Discounts are quoted to regular trade only.

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NATIONAL Heating materials have been produced continuously since 1894. They are warming thousands of buildings, large and small, throughout the United States and Canada as well as Foreign countries. We consequently call attention to the many years of satisfactory service back of National products. In its 30 years of manufacturing experience, the National Radiator Company has been responsible for some of the most important innovations and improvements in Cast Iron Boiler and Radiator manufacture. It was the first to perfect and adopt the Malleable Cast Iron Push Nipple, the first to adopt the Plain type of a radiator as a standard, and the first to simplify the multiplicity of radiator patterns and heights in introducing the Aero radiator. In this pattern One type of section—top and bottom nipple connected—Three Patterns and Sixteen Heights comprise the entire line. Each radiator is vented for both Steam and Hot Water and any radiator consequently can be used for Steam, Hot Water, Vapor Vacuum, or any approved method of heating.

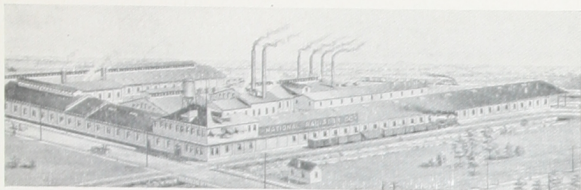
#### NATIONAL RADIATOR COMPANY

Johnstown, Pa.

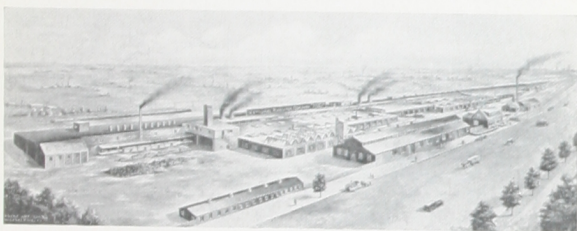
#### BRANCHES

New York .....	47 W. 42nd Street
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# Plants in Which National Heating Materials Are Made



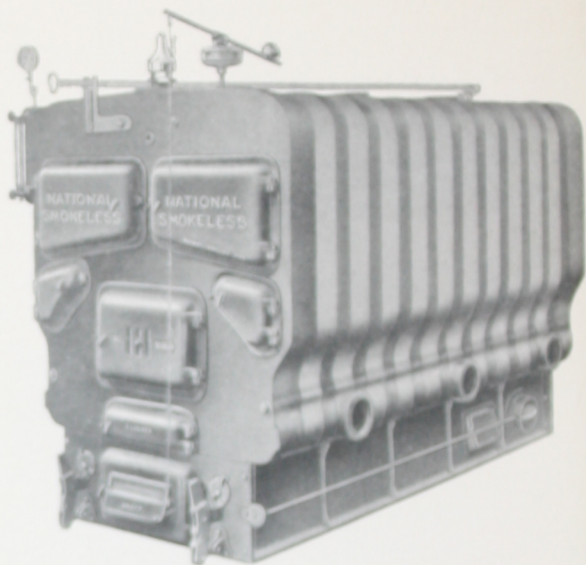
Johnstown, Pa., Plant



Trenton, N. J., Plant



New Castle, Pa., Plant



## Smokeless Steam Boiler

*Patents Granted*

THE National Up-Draft Smokeless Boiler, attached to the proper size flue, will furnish more perfect combustion than has yet been secured in any Low Pressure Heating Boiler. It will comply with any Smoke Ordinance and will reduce Fuel Bills very materially. Being made of cast iron, it will last as long as the building itself.



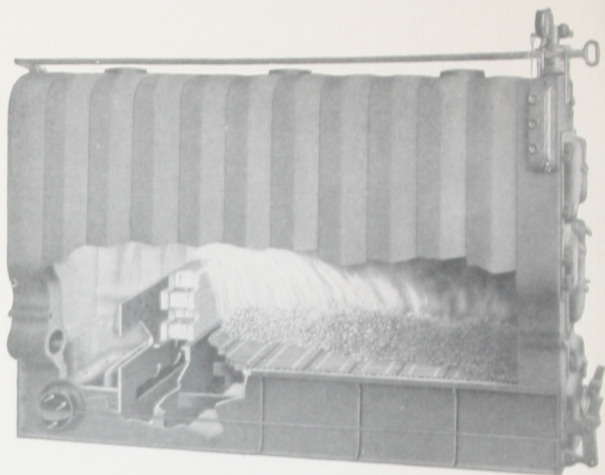
## Ratings and Measurements

## STEAM

Size	Rating	Number of Sections	Number of Grates	Grate Area Sq. Ft.	Combustion Chamber Area, Sq. Ft.	Height Water Line Inches	Height Top Outlet Inches	Height Including Trim- mings	Width Boiler Inches	Width Including Trim- mings Inches	Length Including Smoke- hood Inches	Size Base Inches	Outlet No. and Size	Size Smoke Pipe
25-8	2450	8	5	6.11	2.32	49	57 1/4	65 5/8	36 1/2	40 3/4	67 5/8	27 5/8 x 53 5/8	3-7	12
25-9	2775	9	6	7.27	2.32	49	57 1/4	65 5/8	36 1/2	40 3/4	74 5/8	27 5/8 x 60 5/8	3-7	12
25-10	3100	10	7	8.43	2.32	49	57 1/4	65 5/8	36 1/2	40 3/4	81 5/8	27 5/8 x 67 5/8	3-7	12
25-11	3425	11	8	9.59	2.32	49	57 1/4	65 5/8	36 1/2	40 3/4	88 5/8	27 5/8 x 74 5/8	3-7	12
25-12	3750	12	9	10.75	2.32	49	57 1/4	65 5/8	36 1/2	40 3/4	95 5/8	27 5/8 x 81 5/8	3-7	12
31-9	4050	9	6	10.24	3.38	52	61	71 1/4	50	54	79 1/4	33 1/4 x 65 1/4	3-0	15
31-10	4500	10	7	11.93	3.38	52	61	71 1/4	50	54	88	33 1/4 x 74	3-5	15
31-11	4950	11	8	13.62	3.38	52	61	71 1/4	50	54	95 1/2	33 1/4 x 81 1/2	3-5	15
31-12	5400	12	9	15.31	3.38	52	61	71 1/4	50	54	103	33 1/4 x 89	3-5	15
31-13	5850	13	10	17.00	3.38	52	61	71 1/4	50	54	110 1/2	33 1/4 x 96 1/2	3-5	15
36-9	5900	9	6	13.75	4.50	60 1/4	70	78 3/4	56	60	87 1/2	41 5/8 x 73 1/2	3-5	16
36-10	6600	10	7	16.00	4.50	60 1/4	70	78 3/4	56	60	95 5/8	41 5/8 x 81 5/8	3-5	16
36-11	7300	11	8	18.25	4.50	60 1/4	70	78 3/4	56	60	104 1/4	41 5/8 x 90 1/4	3-5	16
36-12	8000	12	9	20.50	4.50	60 1/4	70	78 3/4	56	60	112 5/8	41 5/8 x 98 5/8	3-5	16
36-13	8700	13	10	22.75	4.50	60 1/4	70	78 3/4	56	60	121	41 5/8 x 107	4-5	16
36-14	9400	14	10	22.75	6.75	60 1/4	70	78 3/4	56	60	129 5/8	41 5/8 x 115 3/8	4-5	16
36-15	10100	15	11	25.00	6.75	60 1/4	70	78 3/4	56	60	137 1/4	41 5/8 x 123 1/4	4-5	16
36-16	10800	16	11	25.00	9.00	60 1/4	70	78 3/4	56	60	146 5/8	41 5/8 x 132 1/8	4-5	16
48-9	9600	9	6	21.78	7.10	68	80	89	67	71	109 1/4	53 5/8 x 89 1/4	3-6	20
48-10	10775	10	7	25.33	7.10	68	80	89	67	71	119 5/8	53 5/8 x 99 5/8	3-6	20
48-11	11950	11	8	28.88	7.10	68	80	89	67	71	130 1/2	53 5/8 x 110 1/2	4-6	20
48-12	13125	12	9	32.43	7.10	68	80	89	67	71	141 5/8	53 5/8 x 121 5/8	4-6	20
48-13	14300	13	10	35.98	7.10	68	80	89	67	71	151 5/4	53 5/8 x 131 3/4	5-6	20
48-14	15475	14	10	35.98	10.65	68	80	89	67	71	162 3/8	53 5/8 x 142 3/8	5-6	20
48-15	16650	15	11	39.53	10.65	68	80	89	67	71	173	53 5/8 x 153	5-6	20
48-16	17825	16	11	39.53	14.20	68	80	89	67	71	183 5/8	53 5/8 x 163 5/8	5-6	20

Additional measurements, pages 9 and 10. Covering, page 41  
Assembling chart, page 8. Chimneys, page 11





Patents Granted

## Sectional View Smokeless Boiler

The National Up-Draft Smokeless Boiler shows an increase of approximately 28 per cent in evaporation as compared with a regular surface burning boiler and on the same amount of fuel charged. That it is smokeless is evidenced by the smoke density at the stack being reduced to the Ringelmann No. 1 Smoke Screen in about seven seconds after firing a new charge of coal. It positively will burn smoke and gases which ordinarily pass out the chimney and are wasted—it will reduce operating costs.

# Ratings and Measurements

## WATER

Size	Rating	Number Sections	Number Grates	Grate Area Sq. Ft.	Combustion Chamber Area Sq. Ft.	Height Top Outlet Inches	Width Boiler Inches	Length Including Smokehood Inches	Size Base Inches	Outlets No. and Size	Size Smoke Pipe Inches
8-25	4000	8	5	6.11	2.32	57 1/4	36 1/2	67 5/8	27 7/8 x 53 5/8	3-4"	12
9-25	4550	9	6	7.27	2.32	57 1/4	36 1/2	74 5/8	27 7/8 x 60 5/8	3-4"	12
10-25	5100	10	7	8.43	2.32	57 1/4	36 1/2	81 5/8	27 7/8 x 67 5/8	3-4"	12
11-25	5650	11	8	9.59	2.32	57 1/4	36 1/2	88 5/8	27 7/8 x 74 5/8	3-4"	12
12-25	6200	12	9	10.75	2.32	57 1/4	36 1/2	95 5/8	27 7/8 x 81 5/8	3-4"	12
9-31	6675	9	6	10.24	3.38	61	50	79 1/4	33 3/4 x 65 1/4	3-5"	15
10-31	7425	10	7	11.93	3.38	61	50	88	33 3/4 x 74	3-5"	15
11-31	8175	11	8	13.62	3.38	61	50	95 1/2	33 3/4 x 81 1/2	3-5"	15
12-31	8925	12	9	15.31	3.38	61	50	103	33 3/4 x 89	3-5"	15
13-31	9675	13	10	17.00	3.38	61	50	110 1/2	33 3/4 x 96 1/2	3-5"	15
9-36	9750	9	6	13.75	4.50	70	56	87 1/2	41 3/8 x 73 1/2	3-5"	16
10-36	10900	10	7	16.00	4.50	70	56	95 7/8	41 3/8 x 81 7/8	3-5"	16
11-36	12050	11	8	18.25	4.50	70	56	104 1/4	41 3/8 x 90 1/4	3-5"	16
12-36	13200	12	9	20.50	4.50	70	56	112 5/8	41 3/8 x 98 5/8	3-5"	16
13-36	14350	13	10	22.75	4.50	70	56	121	41 3/8 x 107	4-5"	16
14-36	15500	14	10	22.75	6.75	70	56	129 3/8	41 3/8 x 115 3/8	4-5"	16
15-36	16650	15	11	25.00	6.75	70	56	137 3/4	41 3/8 x 123 3/4	4-5"	16
16-36	17800	16	11	25.00	9.00	70	56	146 1/8	41 3/8 x 132 1/8	4-5"	16
9-48	15825	9	6	21.78	7.10	80	67	109 1/4	53 7/8 x 89 1/4	3-6"	20
10-48	17775	10	7	25.33	7.10	80	67	119 7/8	53 7/8 x 97 7/8	3-6"	20
11-48	19725	11	8	28.88	7.10	80	67	130 1/2	53 7/8 x 110 1/2	4-6"	20
12-48	21675	12	9	32.43	7.10	80	67	141 5/8	53 7/8 x 121 5/8	4-6"	20
13-48	23625	13	10	35.98	7.10	80	67	151 3/4	53 7/8 x 131 3/4	5-6"	20
14-48	25575	14	10	35.98	10.65	80	67	162 3/8	53 7/8 x 142 3/8	5-6"	20
15-48	27525	15	11	39.53	10.65	80	67	173	53 7/8 x 153	5-6"	20
16-48	29475	16	11	39.53	14.20	80	67	183 3/8	53 7/8 x 163 3/8	5-6"	20

Additional measurements, pages 9 and 10. Covering, page 41. Assembling chart, page 8. Chimneys, page 11.

# Smokeless Boiler Assembling Chart

F—Front Section; T—Tapped Section; C—Center Section; B—Back Section; N—Uptake Section Next to Back, Tapped; M—Uptake Section Next to Back, Plain; U—Uptake Section Second From Back, O—Uptake Section Second From Back.

## 25" BOILER ASSEMBLY

8 sec. 25 inch	F T C T C C N B
9 sec. 25 inch	F T C C T C C N B
10 sec. 25 inch	F T C C T C C C N B
11 sec. 25 inch	F T C C T C C C C N B
12 sec. 25 inch	F T C C T C C C C C N B

## 31" BOILER ASSEMBLY

9 sec. 31 inch	F T C C T C C N B
10 sec. 31 inch	F T C C T C C C N B
11 sec. 31 inch	F T C C T C C C C N B
12 sec. 31 inch	F T C C T C C C C C N B
13 sec. 31 inch	F T C C T C C C C C C N B

## 36" BOILER ASSEMBLY

9 sec. 36 inch	F T C C T C C N B
10 sec. 36 inch	F T C C T C C C N B
11 sec. 36 inch	F T C C T C C C C N B
12 sec. 36 inch	F T C C T C C C C C N B
13 sec. 36 inch	F T C C T C C C C C C N B
14 sec. 36 inch	F T C C T C C C C C C C N B
15 sec. 36 inch	F T C C T C C C C C C C C N B
16 sec. 36 inch	F T C C T C C C C C C C C C N B

## 48" BOILER ASSEMBLY

### Left Hand

9 sec.	B N C C C C C T F
10 sec.	B N C C C C C C T F
11 sec.	B N C C C C C C C T F
12 sec.	B N C C C C C C C C T F
13 sec.	B N C C C C C C C C C T F
14 sec.	B N C C C C C C C C C C T F
15 sec.	B N C C C C C C C C C C C T F
16 sec.	B N C C C C C C C C C C C C T F

## 48" BOILER ASSEMBLY

### Right Hand

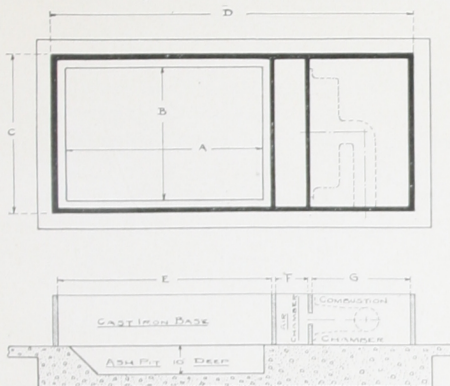
9 sec.	F C C T C C C M B
10 sec.	F C C C T C C C M B
11 sec.	F C C C T C C C C M B
12 sec.	F C C C T C C C C C M B
13 sec.	F C C C T C C C C C C M B
14 sec.	F C C C T C C C C C C C M B
15 sec.	F C C C T C C C C C C C C M B
16 sec.	F C C C T C C C C C C C C C M B

Note:—"N"—Tapping on the 25-inch, 31-inch and 36-inch is on right-hand side facing Boiler.

"N"—Tapping on the 48-inch (supply tapping on top of boiler) is on the left-hand side facing Boiler.

"T"—On all sizes, can be placed on either side.

## Foundation Plan National Up-Draft Smokeless Boiler



**25" BOILER**

No. Sec.	No. Grates	A	B	C	D	E	F	G
8	5	31 "	20½"	27⅞"	53⅝"	37¼"	8	67⅞"
9	6	38 "	20½"	27⅞"	60⅝"	44¼"	8	67⅞"
10	7	45 "	20½"	27⅞"	67⅝"	51¼"	8	67⅞"
11	8	52 "	20½"	27⅞"	74⅝"	58¼"	8	67⅞"
12	9	59 "	20½"	27⅞"	81⅝"	65¼"	8	67⅞"

**31" BOILER**

9	6	41¼"	26¾"	33¾"	65¼"	47¼"	8	9½"
10	7	48¾"	26¾"	33¾"	74"	54¾"	8	9½"
11	8	56¼"	26¾"	33¾"	81½"	62¼"	8	9½"
12	9	63¾"	26¾"	33¾"	89 "	69¾"	8	9½"
13	10	71¼"	26¾"	33¾"	96½"	77¼"	8	9½"

**36" BOILER**

9	6	47⅝"	32½"	41⅝"	73½"	53⅝"	8	10⅝"
10	7	56 "	32½"	41⅝"	81⅞"	62 "	8	10⅝"
11	8	64⅜"	32½"	41⅝"	90¼"	70⅜"	8	10⅝"
12	9	72¾"	32½"	41⅝"	98⅝"	78¾"	8	10⅝"
13	10	81½"	32½"	41⅝"	107 "	87½"	8	10⅝"
14	10	81½"	32½"	41⅝"	115⅝"	87½"	8	19 "
15	11	89½"	32½"	41⅝"	123¾"	95½"	8	19 "
16	11	89½"	32½"	41⅝"	132½"	95½"	8	27⅜"

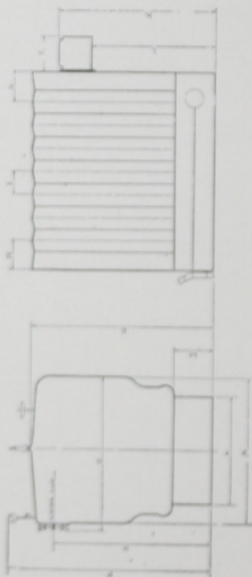
**48" BOILER**

9	6	58½"	44¾"	53⅞"	89¼"	65½"	8	14 "
10	7	69½"	44¾"	53⅞"	99⅞"	76½"	8	14 "
11	8	79¾"	44¾"	53⅞"	110½"	86¾"	8	14 "
12	9	90⅜"	44¾"	53⅞"	121⅝"	97⅜"	8	14 "
13	10	101 "	44¾"	53⅞"	131¾"	108 "	8	14 "
14	10	101 "	44¾"	53⅞"	142⅝"	108 "	8	24⅝"
15	11	111⅝"	44¾"	53⅞"	153 "	118⅝"	8	24⅝"
16	11	111⅝"	44¾"	53⅞"	163⅝"	118⅝"	8	35¼"

Note:—It is very important in providing a foundation for the National Up-Draft Smokeless Boiler that care be used that the Closed Chamber under Bridge Wall does not extend over pit. This Closed Chamber must be air tight to insure perfect results from Preheating Air Device.



## Measurements



Steam and Water (Inches)

Size Boiler	A	B	C	D	E	F	G	H	I	J	K	L	M	Size of Fire Door
25-Inch.....	27 7/8	36 1/4	40 3/4	49	57 1/4	65 1/4	9 1/4	9 1/4	6 1/4	14	49 1/4	36	12 7/8	10 x 15 3/4
31-Inch.....	33 3/4	50	54	52	61	71 1/4	10 5/8	10	7 1/4	14	53	41 1/4	12 7/8	11 x 18
36-Inch.....	41 1/4	56	60	60 1/4	70	78 3/4	11 3/4	11	8 1/4	14	58 3/4	46 3/4	15	13 x 20
48-Inch.....	53 1/4	67	71	68	80	89	14 1/4	12 1/4	10 1/4	20	67 3/4	50 1/4	15	10 1/2 x 17

## Equipment

A complete set of Firing Tools is furnished with all National Up-Draft Smokeless Boilers. This includes a slice bar, wire flue brush with handle, a hoe with long handle for cleaning Ashpit and a hoe with short handle for cleaning under Bridge Wall and Combustion Chamber. Steam boiler equipment includes fittings for water column, try cocks, pop safety valve, steam gauge and Sylphon All-Metal Damper Regulator. The latter is made of the best grade of steam metals, is very sensitive and practically indestructible.



## Chimneys

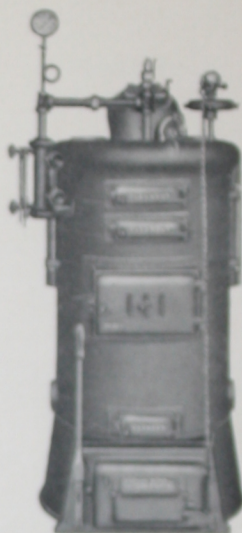
Heating boilers give greatest efficiency and save coal for owners when attached to chimneys which are properly constructed and designed. It is important that they be straight and smooth and of the proper area and height. It is claimed that badly built or too small flues cause a waste of one-third of all the coal that is burned in heating plants.

### Minimum Chimney Flue Sizes and Heights Recommended for Low Pressure Steam and Hot Water Boilers

Area dimensions given are inside measurements of the masonry walls of the chimney.

Boiler Capacity		Number of Heaters Attached to Flue							
Hot Water Rating Sq. Ft.	Steam (Direct) Rating Sq. Ft.	1		2		3		4	
		Dim. In.	Height Feet	Heaters Cross-connected forming a battery and attached to one flue opening					
To	To	Dim. In.	Height Feet	Dim. In.	Height Feet	Dim. In.	Height Feet	Dim. In.	Height Feet
700	450	8x12	35						
900	600	8x12	35						
1100	700	8x12	40						
1500	1000	12x12	35						
2500	1500	12x12	40	12x16	45	16x20	50	20x20	55
4000	2500	12x16	40	16x20	50	20x24	55	24x24	60
5800	3600	16x16	45	20x24	55	24x28	60	28x28	65
7300	4500	16x20	50	24x24	60	28x32	65	30x30	70
8700	5400	20x20	55	24x28	65	30x30	70	30x36	80
10000	6400	20x24	60	28x28	70	30x32	80	30x36	90
12000	7400	24x24	65	30x30	75	32x32	85	36x36	90
14000	8400	24x28	65	32x32	75	30x36	85	36x42	100
15000	9400	28x28	70	30x36	80	36x36	90	42x42	100
17000	10400	28x32	70	30x36	80	36x42	90	42x48	100
19000	11400	30x30	70	36x36	80	42x42	90	48x48	100
20000	12400	32x32	70	46x46	80	52x52	90	58x58	100
22000	13400	32x32	70	46x46	80	52x52	90	58x58	100
24000	14400	32x32	70	46x46	80	52x52	90	58x58	100
25000	15400	32x32	70	46x46	80	52x52	90	58x58	100
27000	16400	34x34	80	48x48	90	54x54	100	64x64	110
29000	17400	34x34	80	48x48	90	54x54	100	64x64	110

Note:—When round tile flue lining is used in place of rectangular, the nearest corresponding area shall be taken.

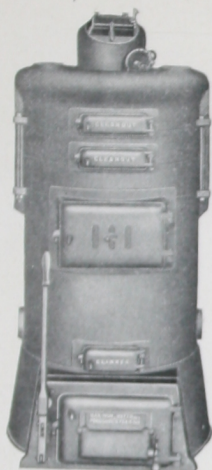
Acme  
Steam  
Boilers

No. of Boiler	Height to Top of Outlets, Inches	Height of Water Line, Inches	Outside Diam. Base, Inches	Nominal Diam. of Firepot	No. and Size of Outlets, Inches	No. and Size of Inlets, Inches	Size of Smoke Pipe, Inches	Rating
No. 1 Series—Base, Combustion Firepot, Center Section and Dome.								
P-1017	45½	40¼	24	17	1-3	2-2½	7	350
P-1019	46½	41¼	26	19	1-3	2-2½	8	450
P-1022	47½	41¾	29	22	1-4	2-3	9	550
P-1025	49½	42¾	32	25	1-4	2-4	10	725
No. 2 Series—Base, Combustion Firepot, Two Center Sections and Dome.								
P-2017	49½	44¾	24	17	1-3	2-2½	7	375
P-2019	51¼	45¾	26	19	1-3	2-2½	8	475
P-2022	51¾	46¼	29	22	1-4	2-3	9	600
P-2025	54	47¾	32	25	1-4	2-4	10	775
No. 3 Series—Base, Combustion Firepot, Three Center Sections and Dome.								
P-3017	54	49	24	17	1-3	2-2½	7	400
P-3019	55¾	50	26	19	1-3	2-2½	8	500
P-3022	56	50¾	29	22	1-4	2-3	9	650
P-3025	58¼	52¼	32	25	1-4	2-4	10	825
No. 4 Series—Base, Combustion Firepot, Four Center Sections and Dome.								
P-4025	63¼	57¼	32	25	1-4	2-4	10	900

For additional measurements, see pages 14 and 15.

Arranged for pipe coil for heating water for domestic purpose.

Covering, page 41.



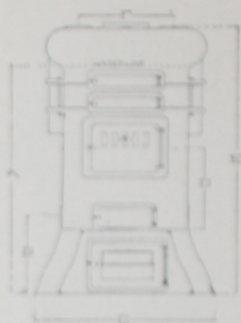
## Acme Water Boilers

No. of Boiler	Height to Top of Outlets, Inches	Outside Diam. of Base, Inches	Nominal Diam. of Firepot, Inches	No. and Size of Outlets, Inches	No. and Size of Inlets, Inches	Size of Smoke Pipe, Inches	Rating
No. 1 Series—Base, Combustion Firepot, Center Section and Dome.							
P-1117	42½	24	17	2-2½	2-2½	7	580
P-1119	43¾	26	19	2-2½	2-2½	8	740
P-1122	44¾	29	22	2-3	2-3	9	910
P-1125	45½	32	25	2-4	2-4	10	1200
No. 2 Series—Base, Combustion Firepot, Two Center Sections and Dome.							
P-2117	46¾	24	17	2-2½	2-2½	7	620
P-2119	47¾	26	19	2-2½	2-2½	8	785
P-2122	48¾	29	22	2-3	2-3	9	990
P-2125	50¼	32	25	2-4	2-4	10	1280
No. 3 Series—Base, Combustion Firepot, Three Center Sections and Dome.							
P-3117	51¼	24	17	2-2½	2-2½	7	660
P-3119	52¾	26	19	2-2½	2-2½	8	825
P-3122	53¾	29	22	2-3	2-3	9	1065
P-3125	54¾	32	25	2-4	2-4	10	1360
No. 4 Series—Base, Combustion Firepot, Four Center Sections and Dome.							
P-4125	59½	32	25	2-4	2-4	10	1485

For additional measurements, see pages 14 and 15.

Arranged for pipe coil for heating water for domestic purposes.

Covering, page 41.

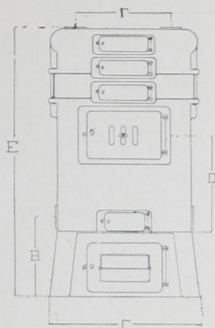


## Acme Boiler Measurements

Steam—Measurements are in Inches

Acme	A	B	C	D	E	F	Size of Fire Door
P-1017	40½	14½	24	19	45½	12½x	81ox11½
P-2017	44½	14½	24	19	49½	12½x	81ox11½
P-3017	49	14½	24	19	54	12½x	81ox11½
P-1019	41½	14½	26	20	46½	13½x	81ox11½
P-2019	45½	14½	26	20	51½	13½x	81ox11½
P-3019	50	14½	26	20	55½	13½x	81ox11½
P-1022	41½	15½x	29	20½	47½	15½x	81ox13½
P-2022	46½	15½x	29	20½	51½	15½x	81ox13½
P-3022	50½	15½x	29	20½	56	15½x	81ox13½
P-1025	47½	15½x	32	21½	49½	17½x	81ox13½
P-2025	47½	15½x	32	21½	54	17½x	81ox13½
P-3025	52½	15½x	32	21½	58½	17½x	81ox13½
P-4025	57½	15½x	32	21½	63½	17½x	81ox13½



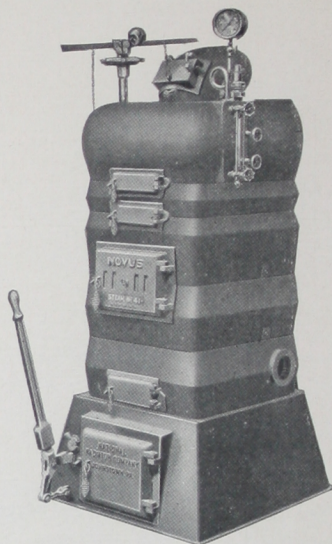


## Acme Boiler Measurements

Water—Measurements are in Inches

Acme	B	C	D	E	F	Size of Fire Door
P-1117.....	14 $\frac{3}{4}$	24	19	42 $\frac{1}{2}$	14 $\frac{9}{16}$	8 $\frac{1}{2}$ x11 $\frac{1}{2}$
P-2117.....	14 $\frac{3}{4}$	24	19	46 $\frac{7}{8}$	14 $\frac{9}{16}$	8 $\frac{1}{2}$ x11 $\frac{1}{2}$
P-3117.....	14 $\frac{3}{4}$	24	19	51 $\frac{1}{4}$	14 $\frac{9}{16}$	8 $\frac{1}{2}$ x11 $\frac{1}{2}$
P-1119.....	14 $\frac{3}{4}$	26	20	43 $\frac{3}{8}$	16 $\frac{3}{8}$	8 $\frac{1}{2}$ x11 $\frac{1}{2}$
P-2119.....	14 $\frac{3}{4}$	26	20	47 $\frac{7}{8}$	16 $\frac{3}{8}$	8 $\frac{1}{2}$ x11 $\frac{1}{2}$
P-3119.....	14 $\frac{3}{4}$	26	20	52 $\frac{1}{8}$	16 $\frac{3}{8}$	8 $\frac{1}{2}$ x11 $\frac{1}{2}$
P-1122.....	15 $\frac{1}{16}$	29	20 $\frac{1}{2}$	44 $\frac{1}{4}$	18 $\frac{9}{16}$	8 $\frac{1}{2}$ x13 $\frac{1}{2}$
P-2122.....	15 $\frac{1}{16}$	29	20 $\frac{1}{2}$	48 $\frac{3}{4}$	18 $\frac{9}{16}$	8 $\frac{1}{2}$ x13 $\frac{1}{2}$
P-3122.....	15 $\frac{1}{16}$	29	20 $\frac{1}{2}$	53 $\frac{3}{8}$	18 $\frac{9}{16}$	8 $\frac{1}{2}$ x13 $\frac{1}{2}$
P-1125.....	15 $\frac{1}{16}$	32	21 $\frac{1}{4}$	45 $\frac{1}{2}$	21 $\frac{1}{16}$	8 $\frac{1}{2}$ x13 $\frac{1}{2}$
P-2125.....	15 $\frac{1}{16}$	32	21 $\frac{1}{4}$	50 $\frac{1}{4}$	21 $\frac{1}{16}$	8 $\frac{1}{2}$ x13 $\frac{1}{2}$
P-3125.....	15 $\frac{1}{16}$	32	21 $\frac{1}{4}$	54 $\frac{7}{8}$	21 $\frac{1}{16}$	8 $\frac{1}{2}$ x13 $\frac{1}{2}$
P-4125.....	15 $\frac{1}{16}$	32	21 $\frac{1}{4}$	59 $\frac{1}{2}$	21 $\frac{1}{16}$	8 $\frac{1}{2}$ x13 $\frac{1}{2}$





Patented

## RATINGS AND MEASUREMENTS

(Dimensions in Inches)

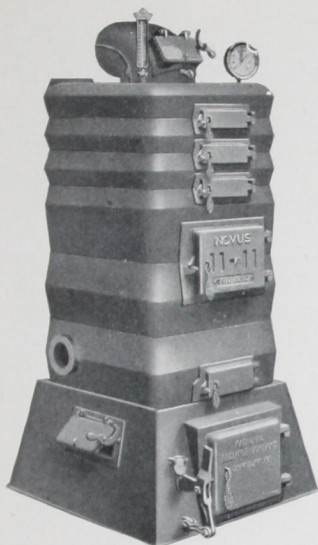
No. Steam	Eight Hour Ratings	Height to Top Outlet	Extreme Depth Boiler	Size Base	Grate Area Sq. Ft.	2 Outlets 2 Inlets Size	Height Water Line	Height Top Smoke-hood	Size Smoke Pipe
No. 0 Series—Base, Three-piece Firepot (with Crown Sheet) and Dome.									
30-S	535	53	31½	30x25	2.34	3	46⅞	61	9
40-S	700	53	36½	30x30	2.98	3	47⅞	61	9
50-S	940	54½	38½	36x30	4.16	4	48¼	62½	10
60-S	1175	54½	44	36x36	5.05	4	48¾	62½	10
No. 1 Series—Base, Three-piece Firepot (with Crown Sheet) Center Section and Dome.									
31-S	570	57½	31½	30x25	2.34	3	51¾	65½	9
41-S	750	57½	36½	30x30	2.98	3	51¾	65½	9
51-S	1000	59½	38½	36x30	4.16	4	53¼	67½	10
61-S	1250	59½	44	36x36	5.05	4	53¾	67½	10
No. 2 Series—Base, Three-piece Firepot (with Crown Sheet), two Center Sections and Dome.									
32-S	600	62	31½	30x25	2.34	3	55¾	70	9
42-S	800	62	36½	30x30	2.98	3	56⅞	70	9
52-S	1050	64½	38½	36x30	4.16	4	58¼	72½	10
62-S	1325	64½	44	36x36	5.05	4	58¾	72½	10

For additional measurements, see pages 18 and 19.

Arranged for pipe coil for heating water for domestic purposes.

Do not bush flow outlets on steam boilers. Connect full size to main where velocity of steam exceeds 20 feet per second under maximum conditions of load.

Covering, page 41.



Patented

## RATINGS AND MEASUREMENTS

(Dimensions in Inches)

No. Water	Eight Hour Ratings	Height to Top Outlet	Ex-treme Depth Boiler	Size Base	Grate Area Sq. Ft.	2 Out-lets 2 Inlets Size	Height Top Smoke-hood	Size Smoke Pipe
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No. 0 Series—Base, Three-piece Firepot (with Crown Sheet) and Dome.

30-W	880	46½	31½	30x25	2.34	3	54	9
40-W	1155	46½	36½	30x30	2.98	3	54	9
50-W	1550	48	38½	36x30	4.16	4	56	10
60-W	1940	48	44	36x36	5.05	4	56	10

No. 1 Series—Base, Three-piece Firepot (with Crown Sheet), Center Section and Dome.

31-W	940	51	31½	30x25	2.34	3	58½	9
41-W	1240	51	36½	30x30	2.98	3	58½	9
51-W	1650	53	38½	36x30	4.16	4	61	10
61-W	2065	53	44	36x36	5.05	4	61	10

No. 2 Series—Base, Three-piece Firepot (with Crown Sheet) two Center Sections and Dome.

32-W	990	55½	31½	30x25	2.34	3	63	9
42-W	1320	55½	36½	30x30	2.98	3	63	9
52-W	1735	58	38½	36x30	4.16	4	66	10
62-W	2185	58	44	36x36	5.05	4	66	10

For additional measurements, see pages 18 and 19.

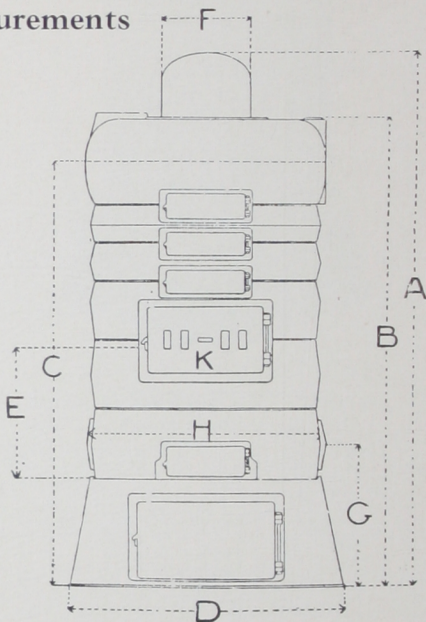
Arranged for pipe coil for heating water for domestic purposes.

Covering, page 41.

On the opposite page there is a table giving all measurements applying to this illustration. Outline does not represent water boiler. The outline of the steam boiler is used to show the measurements of both the steam and water types.

For convenience in ordering repairs for firepot, we have numbered each section from the bottom and up.

## Measurements



Center to Center Outlet Opening Measurements

30-40 Series		50 Series		60 Series	
W	S	W	S	W	S
16¼ Inches	16¼ Inches	21¼ Inches	22 Inches	21 Inches	22 Inches

# NATIONAL NOVUS BOILERS

The following table gives all the measurements in inches on National Novus Steam and Hot-Water Boilers, upright types.

## STEAM

Size	A	B	C	D	E	F	G	H	K
30-S	61	53	46 $\frac{7}{8}$	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
31-S	65 $\frac{1}{2}$	57 $\frac{1}{2}$	51 $\frac{3}{4}$	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
32-S	70	62	55 $\frac{3}{4}$	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
40-S	61	53	47 $\frac{1}{4}$	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
41-S	65 $\frac{1}{2}$	57 $\frac{1}{2}$	51 $\frac{3}{4}$	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
42-S	70	62	56 $\frac{1}{8}$	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
50-S	62 $\frac{1}{2}$	54 $\frac{1}{2}$	48 $\frac{1}{4}$	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
51-S	67 $\frac{1}{2}$	59 $\frac{1}{2}$	53 $\frac{1}{4}$	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
52-S	72 $\frac{1}{2}$	64 $\frac{1}{2}$	58 $\frac{1}{8}$	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
60-S	62 $\frac{1}{2}$	54 $\frac{1}{2}$	48 $\frac{3}{8}$	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
61-S	67 $\frac{1}{2}$	59 $\frac{1}{2}$	53 $\frac{3}{8}$	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
62-S	72 $\frac{1}{2}$	64 $\frac{1}{2}$	58	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$

## WATER

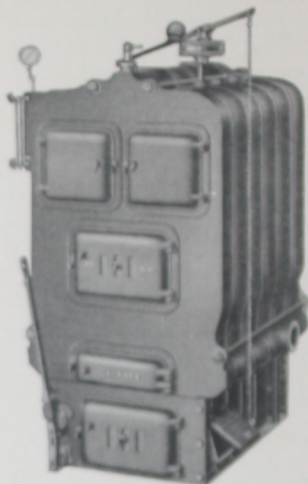
Size	A	B	C	D	E	F	G	H	K
30-W	54	46 $\frac{1}{2}$	....	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
31-W	58 $\frac{1}{2}$	51	....	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
32-W	63	55 $\frac{1}{2}$	....	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
40-W	54	46 $\frac{1}{2}$	....	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
41-W	58 $\frac{1}{2}$	51	....	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
42-W	63	55 $\frac{1}{2}$	....	30	17 $\frac{1}{2}$	10	18 $\frac{7}{8}$	25	12 x8
50-W	56	48	....	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
51-W	61	53	....	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
52-W	66	58	....	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
60-W	56	48	....	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
61-W	61	53	....	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$
62-W	66	58	....	36 $\frac{1}{2}$	18 $\frac{1}{8}$	11 $\frac{3}{4}$	19	32	14 $\frac{1}{2}$ x8 $\frac{3}{4}$

## ADDITIONAL MEASUREMENTS

Series of Boiler (Up-right)	Actual Size of Grate Inches	Depth of Ashpit Under Grate Inches	Size of Ash Base Inches	Height of Ash Base Inches	Size of Fire Door Opening Inches	Width of Boiler Inches	Ex-treme Length of Boiler Inches
30	15 $\frac{3}{8}$ x19 $\frac{3}{8}$	11	25 x30	14 $\frac{1}{2}$	8 x12	25	31 $\frac{1}{2}$
40	19 $\frac{1}{2}$ x20 $\frac{3}{8}$	11	30 x30	14 $\frac{1}{2}$	8 x12	25	36 $\frac{1}{2}$
50	25 $\frac{3}{4}$ x21	10 $\frac{1}{2}$	30 $\frac{1}{2}$ x36 $\frac{1}{2}$	14 $\frac{1}{2}$	8 $\frac{1}{4}$ x14 $\frac{1}{2}$	32	38 $\frac{1}{2}$
60	26 $\frac{1}{8}$ x26 $\frac{1}{4}$	10 $\frac{1}{2}$	36 $\frac{1}{2}$ x35 $\frac{1}{2}$	14 $\frac{1}{2}$	8 $\frac{1}{4}$ x14 $\frac{1}{2}$	32	44

Note:—On steam boiler add 4 inches to width of boiler for steam trimmings.





No. 20-6-S

## Twenty Series Sectional Steam Boilers

No. of Boiler	Rating See Note	Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
20-5-S	850	27 $\frac{1}{4}$	5	3.24	4.15	22 $\frac{1}{2}$ x27 $\frac{1}{4}$	2-3
20-6-S	1050	33 $\frac{1}{2}$	6	4.02	5.18	22 $\frac{1}{2}$ x33 $\frac{1}{2}$	2-3
20-7-S	1250	39 $\frac{1}{4}$	7	4.80	6.22	22 $\frac{1}{2}$ x39 $\frac{1}{4}$	3-3

Height to top of outlet, 54 inches. Width of boiler, 28 inches.

Size smoke pipe, 30 inches. Height of water line, 47 inches.

†Add 12 inches to length to allow for smokehood.

Do not bush flow outlets on steam boilers. Connect full size to main where velocity of steam exceeds 20 feet per second under maximum conditions of load.

Arranged for pipe coil for heating water for domestic purposes.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.





No. 6-20-W

## Twenty Series Sectional Water Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
5-20-W	1400	27¾	5	3.24	4.15	22½ x 27¾	2-3
6-20-W	1725	33½	6	4.02	5.18	22½ x 33½	2-3
7-20-W	2050	39¼	7	4.80	6.22	22½ x 39¼	3-3

Height to top of outlet, 54 inches. Width of boiler, 28 inches.

Size of smoke pipe, 10 inches.

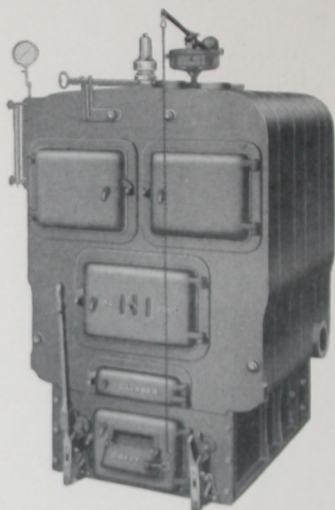
†Add 12 inches to length to allow for smokehood.

Arranged for pipe coil for heating water for domestic purposes.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.



No. 25-6-S

## Twenty-five Series Sectional Steam Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
25-5-S	1375	33	5	4.95	6.13	28x33	2-4
25-6-S	1675	40	6	6.11	7.64	28x40	2-4
25-7-S	1975	47	7	7.27	9.15	28x47	3-4
25-8-S	2275	54	8	8.43	10.65	28x54	3-4

Height to top of outlet, 57¼ inches. Width of boiler, 36½ inches.

Size smoke pipe, 12 inches. Height of water line, 49 inches.

†Add 14 inches to length to allow for smokehood.

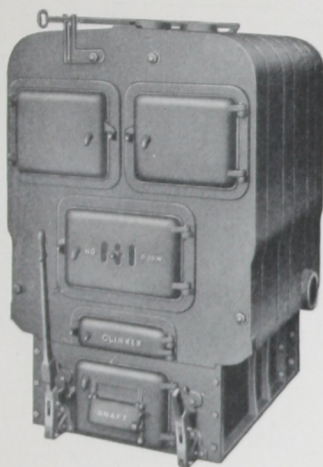
Do not bush flow outlets on steam boilers. Connect full size to mains where velocity of steam exceeds 20 feet per second under maximum conditions of load.

Arranged for pipe coil for heating water for domestic purposes.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.



No. 6-25-W

## Twenty-five Series Sectional Water Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
5-25-W	2250	33	5	4.95	6.13	28x33	2-4
6-25-W	2750	40	6	6.11	7.64	28x40	2-4
7-25-W	3250	47	7	7.27	9.15	28x47	3-4
8-25-W	3750	54	8	8.43	10.65	28x54	3-4

Height to top of outlet, 57¼ inches. Width of boiler, 36½ inches.

Size of smoke pipe, 12 inches.

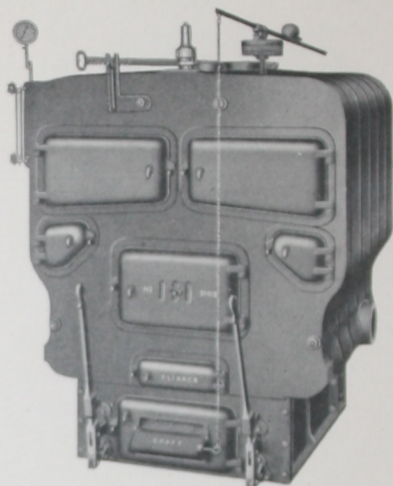
†Add 14 inches to length to allow for smokehood.

Arranged for pipe coil for heating water for domestic purposes.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.



No. 31-6-S

## Thirty-one Series Sectional Steam Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
31-6-S	2475	44½	6	8.55	12.62	33½x42½	2-5
31-7-S	2900	52	7	10.24	15.12	33½x49½	3-5
31-8-S	3325	59½	8	11.93	17.62	33½x57½	3-5
31-9-S	3750	67	9	13.62	20.11	33½x64½	3-5

Height to top of outlet, 61 inches. Width of boiler, 50 inches.

Height of water line, 52 inches. Size of smoke pipe, 15 inches.

†Add 13 inches to length of boiler for smokehood.

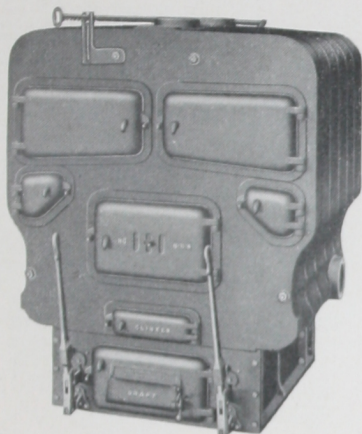
Do not bush flow outlets on steam boilers. Connect full size to main where velocity of steam exceeds 20 feet per second under maximum conditions of load.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.





No. 6-31-W

## Thirty-one Series Sectional Water Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
6-31-W	4100	44½	6	8.55	12.62	33½x42½	2-5
7-31-W	4800	52	7	10.24	15.12	33½x49¾	3-5
8-31-W	5500	59½	8	11.93	17.62	33½x57¾	3-5
9-31-W	6200	67	9	13.62	20.11	33½x64¾	3-5

Height to top of outlet, 61 inches. Width of boiler, 50 inches.

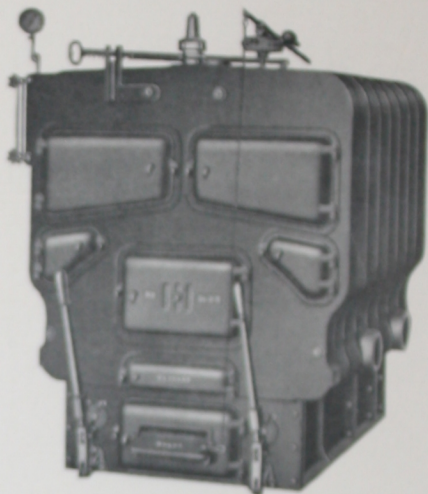
Size of smoke pipe, 15 inches.

†Add 13 inches to length of boiler for smokehood.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.



No. 36-8-S

### Thirty-six Series Sectional Steam Boilers

No. of Boiler	Rating See Note	Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
36- 6-S	3525	49	6	11.50	14.69	41½x47½	2-5
36- 7-S	4200	57½	7	13.75	17.61	41½x56	2-5
36- 8-S	4875	66	8	16.00	20.54	41½x64½	2-5
36- 9-S	5550	74½	9	18.25	23.46	41½x73	2-5
36-10-S	6225	83	10	20.50	26.38	41½x81	2-5

Height to top of outlet, 70 inches. Width of boiler, 36 inches.

Height of water line, 60¼ inches. Size of smoke pipe, 16 inches.

\*Add 14 inches to length to allow for smokehood.

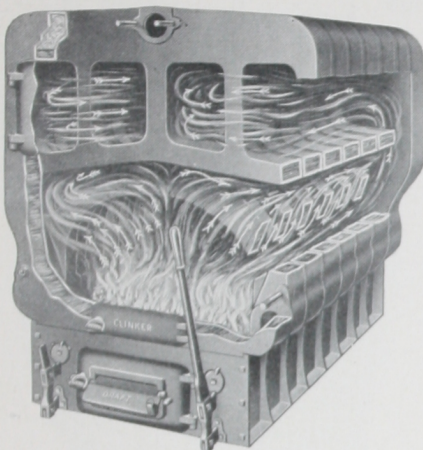
Do not bush flow outlets on steam boilers. Connect full size to main where velocity of steam exceeds 20 feet per second under maximum conditions of load.

Arranged for pipe coil for heating water for domestic purposes.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.



No. 8-36-W  
(Sectional View)

## Thirty-six Series Sectional Water Boilers

No. of Boiler	Rating See Note	†Length of Boiler Inches	No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
6-36-W	5800	49	6	11.50	14.69	41½x47½	2-5
7-36-W	6925	57½	7	13.75	17.61	41½x56	3-5
8-36-W	8050	66	8	16.00	20.54	41½x64½	3-5
9-36-W	9175	74½	9	18.25	23.46	41½x73	3-5
10-36-W	10300	83	10	20.50	26.38	41½x81	3-5

Height to top of outlet, 70 inches. Width of boiler, 56 inches.

Size of smoke pipe, 16 inches.

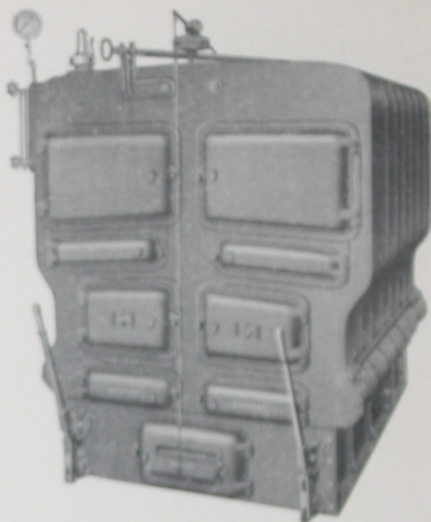
†Add 14 inches to length to allow for smokehood.

Arranged for pipe coil for heating water for domestic purposes.

Additional measurements, pages 32 and 33.

Covering, page 41.

Assembling chart, see page 31.



No. 48-B-S

## Forty-eight Series Sectional Steam Boilers

No. of Boiler	Rating See Note	Length of Boiler Inches	No. of Sects.	Grate Area Sq. Ft.	Average Pipeport Sq. Ft.	Size Foundation Inches	Outlets Inches
48-6-S	6075	59 1/4	6	18.23	22.80	54x 57 1/2	2-6
48-7-S	7250	69 1/4	7	21.78	26.87	54x 68	2-6
48-8-S	8425	80 1/4	8	25.33	31.25	54x 78 1/2	3-6
48-9-S	9600	90 1/4	9	28.87	35.62	54x 89	3-6
48-10-S	10775	101 1/4	10	32.48	40.00	54x 99 1/2	3-6
48-11-S	11950	111 1/4	11	37.97	44.38	54x110	4-6

Height to top of outlet, 80 inches. Width of boiler, 67 inches. Height of water line, 68 inches. Size smoke pipe, 20 inches.

Do not bush flow outlets on steam boilers. Connect full size to mains where velocity of flow exceeds 20 feet per second under maximum conditions of load.

Arranged for pipe coil for heating water for domestic purposes.

†Add 20 inches to length to allow for smokehood.

Sections are in halves.

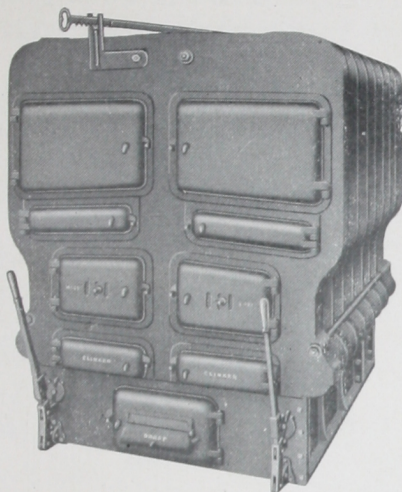
Additional measurements, pages 32 and 33.

Covering, page 41.

See page 30 for information on piping.

Assembling chart, see page 31.





No. 8-48-W

## Forty-eight Series Sectional Water Boilers

No. of Boiler	Rating See Note	††Length of Boiler Inches	†No. of Secs.	Grate Area Sq. Ft.	Average Firepot Sq. Ft.	Size Foundation Inches	Outlets Inches
6-48-W	10000	59¼	6	18.23	22.50	54x 57½	2-6
7-48-W	11950	69¾	7	21.78	26.87	54x 68	2-6
8-48-W	13900	80¼	8	25.33	31.25	54x 78½	3-6
9-48-W	15850	90¾	9	28.87	35.62	54x 89	3-6
10-48-W	17800	101¼	10	32.48	40.00	54x 99½	3-6
11-48-W	19750	111¾	11	37.97	44.38	54x110	4-6

Height to top of outlet, 80 inches. Width of boiler, 67 inches. Size smoke pipe, 20 inches.

Arranged for pipe coil for heating water for domestic purposes.

††Add 20 inches to length to allow for smokehood.

†Sections are in halves.

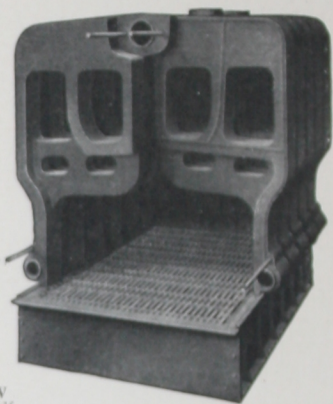
Additional measurements, pages 32 and 33.

Covering, page 41.

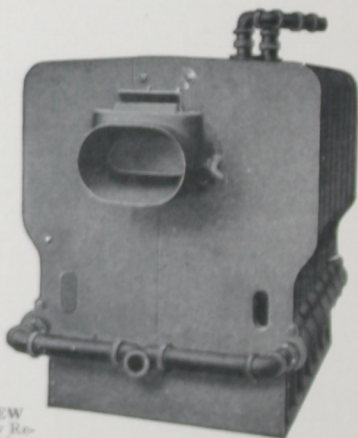
See page 30 for information on piping.

Assembling chart, see page 31.

## Forty-eight Inch Sectional Boiler FOR HEAVY DUTY



REAR VIEW  
With Three Half-  
Sections Removed



REAR VIEW  
Showing how Re-  
turn Connections  
must be Yoked  
Together

## Forty-eight Inch Sectional Boiler

### FOR HEAVY DUTY

The National Forty-eight inch Sectional Boiler is a very efficient, economical and durable boiler for heavy duty.

This boiler has the double section, a feature that makes it easier to handle and erect.

Sections are connected at top with heavy six-inch push nipples and at the bottom with heavy four-inch push nipples.

Pipe coils for heating water for domestic purposes may be inserted if necessary.

The grate is of the flat-surfaced grill pattern, adapted to the use of any kind of fuel. It is arranged with two shakers, thus permitting of operating either the front or back half of grate.

## Sectional Boiler Assembling Chart

F—Front Section; T—Tapped Section; N—Next to Back Tapped Section; M—Next to Back Center Section; C—Center Section; B—Back Section.

20-Inch....F T C N B	5 Sec.25-Inch.....F T C N B
20-Inch....F T C C N B	6 Sec.25-Inch.....F T C C N B
20-Inch....F T C T C N B	7 Sec.25-Inch.....F T C T C N B
	8 Sec.25-Inch.....F T C T C C N B
31-Inch.F T C C N B	6 Sec.36-Inch..F T C C N B
31-Inch.F T C T C N B	7 Sec.36-Inch..F T C T C N B
31-Inch.F T C T C C N B	8 Sec.36-Inch..F T C T C C N B
31-Inch.F T C C T C C N B	9 Sec.36-Inch..F T C C T C C N B
	10 Sec.36-Inch..F C T C C T C C N B

#### Left Hand

#### 48-Inch

#### Right Hand

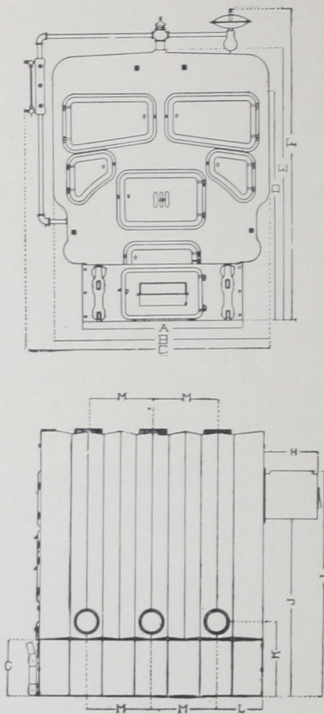
B N C C T F..	6 Sec...F C C M B
B N C C C T F..	7 Sec...F C C C C M B
B N C C C C T F..	8 Sec...F C C T C C M B
B N C C C C C T F..	9 Sec...F C C T C C C M B
B N C C C C C C T F..	10 Sec...F C C C T C C C M B
B N C C C C C C C T F..	11 Sec...F C C T C C T C C M B
B N C C C C C C C C T F..	12 Sec...F C C T C C C T C C M B

Note:—"N"—Tapping on the 25-inch, 31-inch and 36-inch is on the right-hand side facing Boiler.

"N"—Tapping on 48-inch (supply tapping on top of boiler) is on the left-hand side facing Boiler.

"N"—Tapping on the 20-inch and "T" on all sizes; can be placed on either side.

## Measurements



On the opposite page is shown a table giving all measurements as applying to the illustrations. The outline used shows the measurements of both the Steam and Water types.



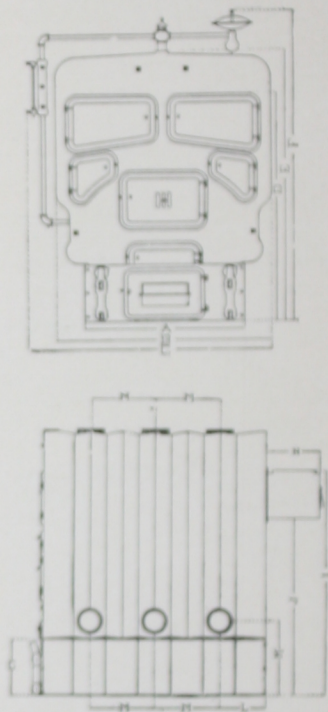
## Measurements

The following table gives all the measurements in inches on Novus Steam and Hot-Water Sectional Boilers.

### STEAM AND WATER

	20 Inches	25 Inches	31 Inches	36 Inches	48 Inches
A	22 $\frac{3}{4}$	27 $\frac{3}{4}$	34	41 $\frac{1}{2}$	54
B	28	36 $\frac{1}{2}$	50	56	67
C	37 $\frac{1}{2}$	44	58 $\frac{1}{4}$	65	76
D	47	49	52	60 $\frac{1}{4}$	68
E	54	57 $\frac{1}{4}$	61	70	80
F	65 $\frac{3}{4}$	74 $\frac{1}{2}$	76 $\frac{1}{2}$	90 $\frac{1}{2}$	101 $\frac{1}{2}$
G	12	12 $\frac{7}{8}$	12 $\frac{7}{8}$	15	15
H	14	14	14	14	20
I	48 $\frac{1}{2}$	49 $\frac{1}{4}$	53	58 $\frac{3}{4}$	67 $\frac{3}{4}$
J	41	36	41 $\frac{1}{2}$	46 $\frac{3}{4}$	50 $\frac{1}{4}$
K	14 $\frac{1}{2}$	16 $\frac{3}{16}$	17	18 $\frac{3}{16}$	...
L	8	9 $\frac{3}{8}$	10 $\frac{5}{8}$	11 $\frac{1}{2}$	15
M	11 $\frac{3}{4}$	14	15 $\frac{1}{8}$	17	21
Size of Fire Door	8 $\frac{1}{2}$ x13	10x15 $\frac{7}{8}$	11x18	13x20	10 $\frac{1}{2}$ x17

## Measurements



On the opposite page is shown a table giving all measurements as applying to the illustrations. The outline used shows the measurements of both the Steam and Water types.

## Measurements

The following table gives all the measurements in inches on Novus Steam and Hot-Water Sectional Boilers.

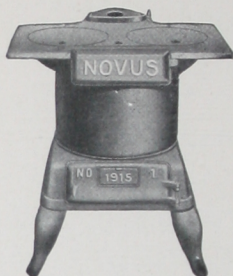
### STEAM AND WATER

	20 Inches	25 Inches	31 Inches	36 Inches	48 Inches
A	22 $\frac{3}{4}$	27 $\frac{3}{4}$	34	41 $\frac{1}{2}$	54
B	28	36 $\frac{1}{2}$	50	56	67
C	37 $\frac{1}{2}$	44	58 $\frac{1}{4}$	65	76
D	47	49	52	60 $\frac{1}{4}$	68
E	54	57 $\frac{1}{4}$	61	70	80
F	65 $\frac{3}{4}$	74 $\frac{1}{2}$	76 $\frac{1}{2}$	90 $\frac{1}{2}$	101 $\frac{1}{2}$
G	12	12 $\frac{7}{8}$	12 $\frac{7}{8}$	15	15
H	14	14	14	14	20
I	48 $\frac{1}{2}$	49 $\frac{1}{4}$	53	58 $\frac{3}{4}$	67 $\frac{3}{4}$
J	41	36	41 $\frac{1}{2}$	46 $\frac{3}{4}$	50 $\frac{1}{4}$
K	14 $\frac{1}{2}$	16 $\frac{3}{16}$	17	18 $\frac{3}{16}$	...
L	8	9 $\frac{3}{8}$	10 $\frac{5}{8}$	11 $\frac{1}{2}$	15
M	11 $\frac{3}{4}$	14	15 $\frac{1}{8}$	17	21
Size of Fire Door	8 $\frac{1}{2}$ x13	10x15 $\frac{7}{8}$	11x18	13x20	10 $\frac{1}{2}$ x17

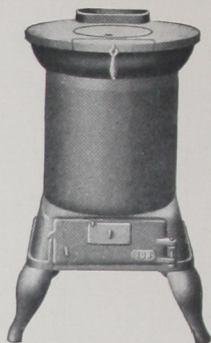
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# NATIONAL HOT WATER SUPPLY BOILERS

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No. 1 Hot Water Supply Boiler



No. 10-B

No.	Height Inches	Size Top Inches	Diam. Base Inches	Diam. Grate Inches	Size Outlet	Size Smoke Pipe Inches	Tank Capacity Gallons
1	24½	16x25	17	10	1¼	6	90

No.	Height Inches	Diam. Heater Inches	Diam. Grate Inches	Size Outlet	Size Smoke Pipe Inches	Tank Capacity Gallons
10-B	30	18	10	1¼	6	120

Nos. 1 and 10-B Heaters have slide-center grates, base and legs.

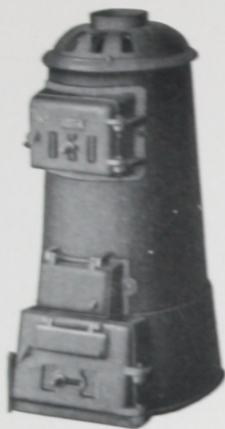
No fire tools are supplied with these heaters.

When Hot Water Supply Boilers are subjected to some unusual pressure, as is the case when tanks are connected direct to City Pumping Station, and the pressure is increased during times of conflagration or the like, it is recommended that the system be equipped with a Water-Pressure Reducing Valve and Relief Valve.





No. 12-B



No. 107-A

No.	Height Inches	Diam. Heater Inches	Diam. Grate Inches	Size Outlet	Size Smoke Pipe Inches	Tank Capacity Gallons
12-B	28½	18	12	1½	6	150
14-B	31½	23	14	2	6	250

No.	Height Inches	Diam. Heater Inches	Diam. Grate Inches	No. and Size Outlets	Size Smoke Pipe Inches	Tank Capacity Gallons
106	27½	16	10	1½	5	80
107-A	32½	16	10	1½	5	125
112	34	17½	12	2	6	250
114	37	20¼	14	2	6	350
116	41½	24	16	2	7	475

The No. 107-A National Novus Hot Water Supply Boiler (illustrated) has an extra deep firepot. Above, and arched over the fire, are a series of flat drop tubes connected to the water chamber at the sides, which add effectually to the heating surface.

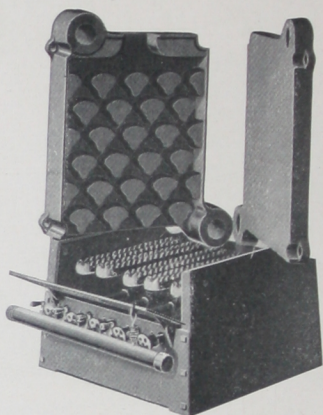
Nos. 12-B and 14-B have rocking and dumping type of grates.

Nos. 106 and 107-A Heaters have one-piece base with both slide and lift draft doors and slide-center grate.

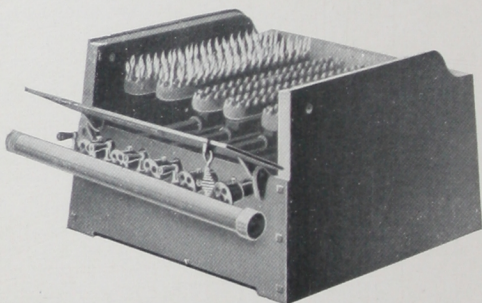
Nos. 112, 114 and 116 have rocking and dumping grates.

A clinker door is provided in the firepot, thus avoiding the necessity of dumping the grate to clean the fire.

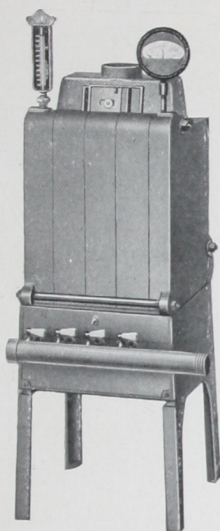
When soft coal is used for fuel, one size larger grate is required than when hard coal is used.



Interior View Radium Boiler



Radium Boiler Base with Burners Assembled



## Gas Water Boilers

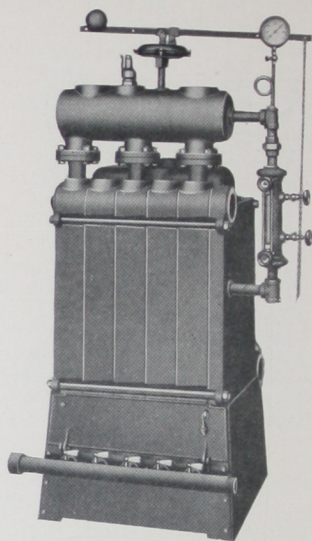
### SERIES 1

No.	Rating	Supply Tapping Inches	Return Tapping Inches	Smoke Connec. Inches	Size of Base Inches	Burner Manifold Inches
41	400	2-2	2-2	4	12x14 $\frac{3}{4}$	1 $\frac{1}{4}$
51	500	2-2	2-2	4	15x14 $\frac{3}{4}$	1 $\frac{1}{4}$
61	600	2-2	2-2	4	18x14 $\frac{3}{4}$	1 $\frac{1}{4}$
71	700	2-2	2-2	4	21x14 $\frac{3}{4}$	1 $\frac{1}{4}$

Size gas supply, 1 inch. Total height of boiler, 43 $\frac{1}{2}$  inches. Height to center of supply tapping, 37 $\frac{3}{4}$  inches. Height to center of return tapping, 22 $\frac{5}{8}$  inches.

No trimmings furnished with water boilers.

Covering, page 41.



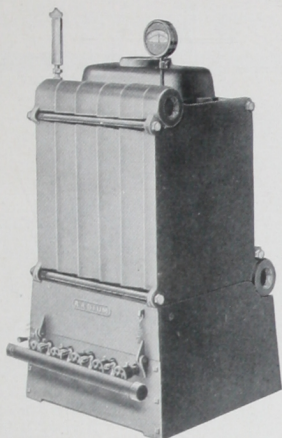
## Gas Steam Boilers SERIES 2

No.	Rating	Supply Taps. Inches	Return Taps. Inches	Size Smoke- hood Inches	Size Base Inches	Burner Manifold Inches
4	450	2-3	2-3	1-5	18x25	1¼
5	575	2-3	2-3	1-7	22x25	1¼
6	700	2-3	2-3	1-7	26x25	1½
7	825	2-3	2-3	1-7	30x25	1½
8	950	2-3	2-3	1-7	34x25	2
9	1075	2-3	2-3	2-7	38x25	2
10	1200	2-3	2-3	2-7	42x25	2
11	1325	2-3	2-3	2-7	46x25	2
12	1450	2-3	2-3	2-7	50x25	2
13	1575	2-3	2-3	2-7	54x25	2
14	1700	2-3	2-3	2-7	58x25	2
15	1825	2-3	2-3	2-7	62x25	2
16	1950	2-3	2-3	2-7	66x25	2½
17	2075	2-3	2-3	2-7	70x25	2½
18	2200	2-3	2-3	2-7	74x25	2½
19	2325	2-3	2-3	2-7	78x25	2½
20	2450	2-3	2-3	2-7	82x25	2½

Height of water line, 36 inches. Height to top of supply tapping, 57 inches. Height to center of return tapping, 16½ inches. Size gas supply 4 to 8 sec., 1 inch; 9 to 12 sec., 1¼ inch; 13 to 20 sec., 1½ inches.

All steam boilers furnished with steam header and a complete set of trimmings. Covering, page 41.



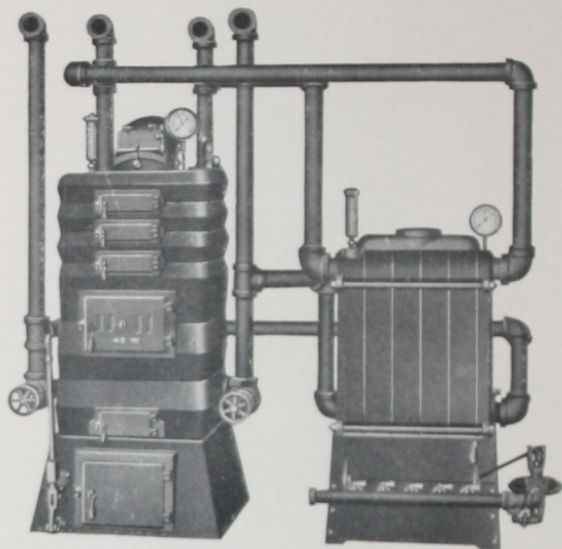


## Gas Water Boilers SERIES 2

No.	Rating	Supply Taps. Inches	Return Taps. Inches	Size Smoke- hood Inches	Size of Base Inches	Burner Manifold Inches
4	750	2-3	2-3	1-5	18x25	1¼
5	950	2-3	2-3	1-7	22x25	1¼
6	1150	2-3	2-3	1-7	26x25	1½
7	1350	2-3	2-3	1-7	30x25	1½
8	1550	2-3	2-3	1-7	34x25	2
9	1750	2-3	2-3	2-7	38x25	2
10	1950	2-3	2-3	2-7	42x25	2
11	2150	2-3	2-3	2-7	46x25	2
12	2350	2-3	2-3	2-7	50x25	2
13	2550	2-3	2-3	2-7	54x25	2
14	2750	2-3	2-3	2-7	58x25	2
15	2950	2-3	2-3	2-7	62x25	2
16	3150	3-3	2-3	2-7	66x25	2½
17	3350	3-3	2-3	2-7	70x25	2½
18	3550	3-3	2-3	3-7	74x25	2½
19	3750	3-3	2-3	3-7	78x25	2½
20	3950	3-3	2-3	3-7	82x25	2½

Height to center of supply tapping, 40¾ inches. Height to center of return tapping, 16½ inches. Distance from center of supply to center of return tapping, 24¼ inches. Height of boiler, 46 inches. Size gas supply 4 to 8 sec., 1 inch; 9 to 12 sec., 1¼ inch; 13 to 20 sec., 1½ inch.

Covering, page 41.



Combination Gas and Coal Heating

Gas and coal boilers can be conveniently yoked together and operated either separately or as one unit for heating purposes. By such an arrangement, both boilers can be utilized in extremely cold weather, or the coal boiler is ready for instant service in the event of any shortage in gas or reduction in gas pressure.



## Sylph-Oil Regulator

Regulates the supply of Preheated air for Up-Draft Smokeless Boilers. Can be regulated to close air intake in from one minute to any longer time required. Increases the efficiency and economy of Up-Draft Smokeless Boilers.

## Boiler Covering

The amount of Asbestos Cement necessary to cover National Boilers  $1\frac{1}{4}$  inches thick is as follows:

### NOVUS UPRIGHT BOILERS

#### Steam or Water

30.....	150 lbs.	50.....	200 lbs.
31.....	175 lbs.	51.....	250 lbs.
32.....	200 lbs.	52.....	275 lbs.
40.....	175 lbs.	60.....	250 lbs.
41.....	200 lbs.	61.....	300 lbs.
42.....	225 lbs.	62.....	325 lbs.

### ACME ROUND BOILERS "P" SERIES

1017 or 1117.....	75 lbs.	1022 or 1122.....	125 lbs.
2017 or 2117.....	100 lbs.	2022 or 2122.....	150 lbs.
3017 or 3117.....	125 lbs.	3022 or 3122.....	175 lbs.
1019 or 1119.....	100 lbs.	1025 or 1125.....	150 lbs.
2019 or 2119.....	125 lbs.	2025 or 2125.....	175 lbs.
3019 or 3119.....	150 lbs.	3025 or 3125.....	200 lbs.
		4025 or 4125.....	225 lbs.

### SECTIONAL AND SMOKELESS

#### Steam or Water

20 Series, 5 Section.....	240 lbs.	36 Series, 6 Section.....	650 lbs.
20 Series, 6 Section.....	280 lbs.	36 Series, 7 Section.....	725 lbs.
20 Series, 7 Section.....	320 lbs.	36 Series, 8 Section.....	800 lbs.
25 Series, 5 Section.....	350 lbs.	36 Series, 9 Section.....	875 lbs.
25 Series, 6 Section.....	400 lbs.	36 Series, 10 Section.....	950 lbs.
25 Series, 7 Section.....	450 lbs.	36 Series, 11 Section.....	1025 lbs.
25 Series, 8 Section.....	500 lbs.	36 Series, 12 Section.....	1100 lbs.
25 Series, 9 Section.....	550 lbs.	36 Series, 13 Section.....	1175 lbs.
25 Series, 10 Section.....	600 lbs.	36 Series, 14 Section.....	1250 lbs.
25 Series, 11 Section.....	650 lbs.	36 Series, 15 Section.....	1325 lbs.
25 Series, 12 Section.....	700 lbs.	36 Series, 16 Section.....	1400 lbs.
31 Series, 6 Section.....	525 lbs.	48 Series, 6 Section.....	850 lbs.
31 Series, 7 Section.....	600 lbs.	48 Series, 7 Section.....	950 lbs.
31 Series, 8 Section.....	675 lbs.	48 Series, 8 Section.....	1050 lbs.
31 Series, 9 Section.....	750 lbs.	48 Series, 9 Section.....	1150 lbs.
31 Series, 10 Section.....	825 lbs.	48 Series, 10 Section.....	1250 lbs.
31 Series, 11 Section.....	900 lbs.	48 Series, 11 Section.....	1350 lbs.
31 Series, 12 Section.....	975 lbs.	48 Series, 12 Section.....	1450 lbs.
31 Series, 13 Section.....	1050 lbs.	48 Series, 13 Section.....	1550 lbs.
		48 Series, 14 Section.....	1650 lbs.
		48 Series, 15 Section.....	1750 lbs.
		48 Series, 16 Section.....	1850 lbs.

### RADIUM BOILERS

#### Steam or Water

41.....	42 lbs.	10.....	168 lbs.
51.....	48 lbs.	11.....	180 lbs.
61.....	54 lbs.	12.....	192 lbs.
71.....	60 lbs.	13.....	204 lbs.
		14.....	216 lbs.
4.....	96 lbs.	15.....	228 lbs.
5.....	108 lbs.	16.....	240 lbs.
6.....	120 lbs.	17.....	252 lbs.
7.....	132 lbs.	18.....	264 lbs.
8.....	144 lbs.	19.....	276 lbs.
9.....	156 lbs.	20.....	288 lbs.

## Three Column Pattern

Patents Applied For





# AERO Three Column Radiators

## SIZES AND RATINGS

No. of Sections	Length 2½-in. per Sec.	Square Feet—Heating Surface			
		36-in. Height 3¾ Sq. Ft. per Sec.	30-in. Height 2¾ 3 Sq. Ft. per Sec.	26-in. Height 2¾ Sq. Ft. per Sec.	20-in. Height 1¾ Sq. Ft. per Sec.
2	5	7½	6	5½	3½
3	7½	11	9	8	5¼
4	10	14¾	12	10¾	7
5	12½	18½	15	13½	8¾
6	15	22	18	16	10½
7	17½	25¾	21	18¾	12¼
8	20	29½	24	21½	14
9	22½	33	27	24	15¾
10	25	36¾	30	26¾	17½
11	27½	40½	33	29½	19¼
12	30	44	36	32	21
13	32½	47¾	39	34¾	22¾
14	35	51½	42	37½	24½
15	37½	55	45	40	26¼
16	40	58¾	48	42¾	28
17	42½	62½	51	45½	29¾
18	45	66	54	48	31½
19	47½	69¾	57	50¾	33¼
20	50	73½	60	53½	35
21	52½	77	63	56	36¾
22	55	80¾	66	58¾	38½
23	57½	84½	69	61½	40¼
24	60	88	72	64	42
25	62½	91¾	75	66¾	43¾
26	65	95½	78	69½	45½
27	67½	99	81	72	47¼
28	70	102¾	84	74¾	49
29	72½	106½	87	77½	50¾
30	75	110	90	80	52½
31	77½	113¾	93	82¾	54¼
32	80	117½	96	85½	56

\*Add ½" to length for each bushing.

Width of feet, 5½ inches.

Width of section, 5½ inches.

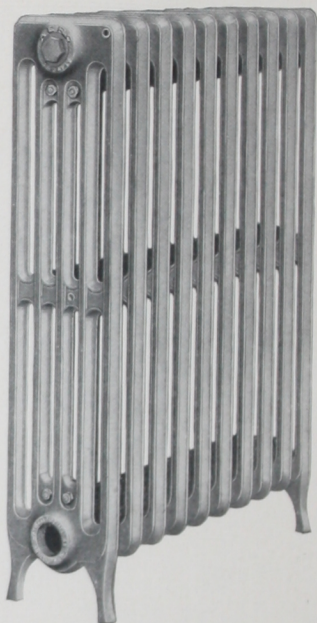
Height from floor to center of tapping boss, both feed and return, for steam and water, 4½ inches.

Aero Three Column Radiators are tapped 1½ inches top and bottom both ends and bushed to sizes required. All radiators are connected at top and bottom with Heavy Malleable Iron Push Nipples and are vented for both Steam and Hot Water. They consequently can be used on any kind of a Steam, Vapor or Hot Water Heating System.

Aero Radiators are furnished legless or with legs 6 inches from floor to center of tapping boss when ordered.

## Five Column Pattern

Patents Applied For



# AERO Five Column Radiators

## SIZES AND RATINGS

No. of Sections	Length 2½-in. per Sec.	Square Feet—Heating Surface			
		36-in. Height 5 Sq. Ft. per Sec.	30-in. Height 4 Sq. Ft. per Sec.	26-in. Height 3¾ Sq. Ft. per Sec.	20-in. Height 3 Sq. Ft. per Sec.
2	5	10	8	7½	6
3	7½	15	12	11¼	9
4	10	20	16	15	12
5	12½	25	20	18¾	15
6	15	30	24	22½	18
7	17½	35	28	26¼	21
8	20	40	32	30	24
9	22½	45	36	33¾	27
10	25	50	40	37½	30
11	27½	55	44	41¼	33
12	30	60	48	45	36
13	32½	65	52	48¾	39
14	35	70	56	52½	42
15	37½	75	60	56¼	45
16	40	80	64	60	48
17	42½	85	68	63¾	51
18	45	90	72	67½	54
19	47½	95	76	71¼	57
20	50	100	80	75	60
21	52½	105	84	78¾	63
22	55	110	88	82½	66
23	57½	115	92	86¼	69
24	60	120	96	90	72
25	62½	125	100	93¾	75
26	65	130	104	97½	78
27	67½	135	108	101¼	81
28	70	140	112	105	84
29	72½	145	116	108¾	87
30	75	150	120	112½	90
31	77½	155	124	116¼	93
32	80	160	128	120	96

\*Add ½ inch to length for each bushing.

Width of feet, 8¾ inches.

Width of section, 8¾ inches.

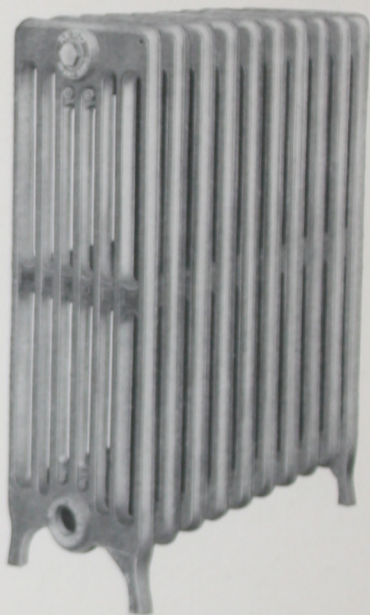
Height from floor to center of tapping boss, both feed and return, for steam and water, 4½ inches.

Aero Five Column Radiators are tapped 1½ inches top and bottom both ends and bushed to sizes required. All radiators are connected at top and bottom with Heavy Malleable Iron Push Nipples and are vented for both Steam and Hot Water. They consequently can be used on any kind of a Steam, Vapor or Hot Water Heating System.

Aero Radiators are furnished legless or with legs 6 inches from floor to center of tapping boss when ordered.

## Seven Column Pattern

Patents Applied For





## AERO Seven Column Radiators

### SIZES AND RATINGS

No. of Sections	Square Feet—Heating Surface						
	Length 2½-in. per Sec. *	36-in. Height 7 Sq. Ft. per Sec.	30-in. Height 6¼ Sq. Ft. per Sec.	26-in. Height 5¼ Sq. Ft. per Sec.	20-in. Height 4½ Sq. Ft. per Sec.	16½-in. Height 3¾ Sq. Ft. per Sec.	13½-in. Height 3¼ Sq. Ft. per Sec.
2	5	14	12¾	10½	9	7½	6½
3	7½	21	19	15¾	13½	11¼	9¾
4	10	28	25½	21	18	15	13
5	12½	35	31¾	26¼	22½	18¾	16¼
6	15	42	38	31½	27	22½	19½
7	17½	49	44½	36¾	31½	26¾	22¾
8	20	56	50¾	42	36	30	26
9	22½	63	57	47¼	40½	33¾	29¼
10	25	70	63½	52½	45	37½	32½
11	27½	77	69¾	57¾	49½	41¼	35¾
12	30	84	76	63	54	45	39
13	32½	91	82½	68¼	58½	48¾	42¼
14	35	98	88¾	73½	63	52½	45½
15	37½	105	95	78¾	67½	56¼	48¾
16	40	112	101½	84	72	60	52
17	42½	119	107¾	89¼	76½	63¾	55¼
18	45	126	114	94½	81	67½	58½
19	47½	133	120¾	99¾	85½	71¼	61¾
20	50	140	126¾	105	90	75	65
21	52½	147	133	110¼	94½	78¾	68¼
22	55	154	139½	115½	99	82½	71½
23	57½	161	145¾	120¾	103½	86¼	74¾
24	60	168	152	126	108	90	78
25	62½	175	158½	131¼	112½	93¾	81¼
26	65	182	164¾	136½	117	97½	84½
27	67½	189	171	141¾	121½	101¼	87¾
28	70	196	177½	147	126	105	91
29	72½	203	183¾	152¼	130½	108¾	94¼
30	75	210	190	157½	135	112½	97½
31	77½	217	196½	162¾	139½	116¼	100¾
32	80	224	202¾	168	144	120	104

\*Add ½ inch to length for each bushing.

Width of feet, 12 inches.

Width of section, 12 inches.

Height from floor to center of tapping boss, both feed and return, on 36", 30", 26" and 20" heights, 4½ inches; on 16½" and 13½" heights, 3 inches.

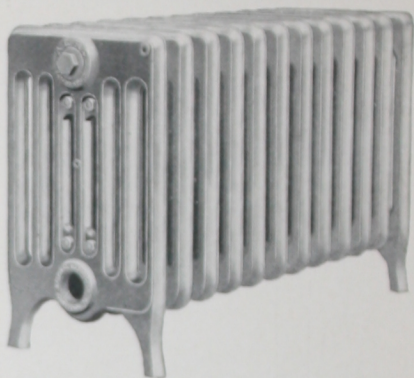
The 16½" and 13½" heights are made regularly with low legs.

When ordered they will be equipped with regular legs, which will increase their heights to 18" and 15" respectively, and the distance from floor to center of tapping boss to 4½ inches.

Aero Seven Column Radiators are tapped 1¼ inches top and bottom both ends and bushed to sizes required. All radiators are connected at top and bottom with Heavy Malleable Iron Push Nipples and are vented for both Steam and Hot Water.

They consequently can be used on any kind of a Steam, Vapor or Hot Water Heating System.

Aero Radiators are furnished legless or with legs 6 inches from floor to center of tapping boss when ordered.

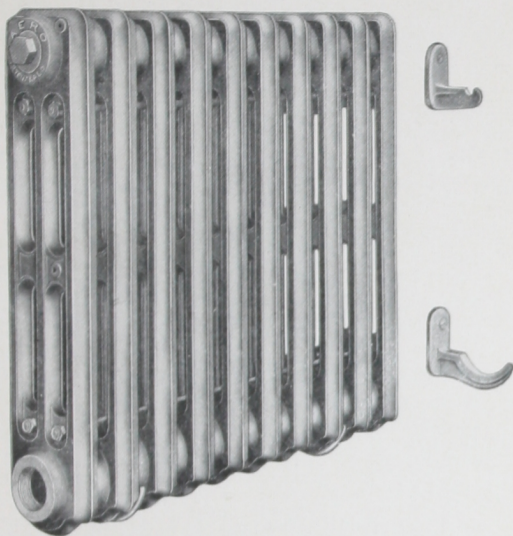


### Aero Window Radiator

AERO Radiators are made in types and heights to suit every building requirement. In every pattern is found that beauty and refinement of proportion so essential to interior decoration.

The window seat has become as popular in the winter as the hammock in the summer. Instead of being shunned, it is now the center of interest in the modern home, for open cheer can be enjoyed in comfort.

Aero Window Radiators are made in the Seven Column pattern in  $13\frac{1}{2}$ ",  $16\frac{1}{2}$ " and 20" heights. Either low or high feet are supplied.



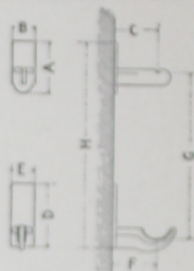
### Aero Legless Radiator

A BATHROOM, equally heated throughout, means undreamed of comfort in a well planned home. Unusual care is always exercised in its equipment.

Aero Legless or side-wall radiators are particularly adapted to bathrooms. This slender, gracefully designed radiator, enameled to harmonize with the fixtures or color scheme desired, is not only sanitary but lends that degree of elegance which is a source of delight to the owner.

All surfaces are readily accessible for cleaning and it can be kept as immaculate as the bathroom fixtures.

## Aero Legless Radiators Concealed Brackets



Dimensions	Top—Inches			Dimension—"G"—Inches				
	A	B	C	36	30	26	23	20
Three-Column .....	4 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	28 $\frac{1}{4}$	22 $\frac{1}{4}$	18 $\frac{1}{4}$	15 $\frac{1}{4}$	12 $\frac{1}{4}$
Five-Column .....	6	2 $\frac{1}{2}$	4 $\frac{1}{2}$	28 $\frac{1}{4}$	22 $\frac{1}{4}$	18 $\frac{1}{4}$	15 $\frac{1}{4}$	12 $\frac{1}{4}$
Seven-Column .....	5 $\frac{1}{2}$	2 $\frac{1}{2}$	6 $\frac{1}{2}$	28 $\frac{1}{4}$	22 $\frac{1}{4}$	18 $\frac{1}{4}$	15 $\frac{1}{4}$	12 $\frac{1}{4}$

Dimensions	Bottom—Inches			Dimension—"H"—Inches				
	D	E	F	36	30	26	23	20
Three-Column .....	4 $\frac{3}{4}$	2 $\frac{1}{2}$	3 $\frac{1}{4}$	32 $\frac{1}{2}$	26 $\frac{1}{2}$	22 $\frac{1}{2}$	19 $\frac{1}{2}$	16 $\frac{1}{2}$
Five-Column .....	6	2 $\frac{1}{2}$	3 $\frac{1}{4}$	34 $\frac{1}{4}$	28 $\frac{1}{4}$	24 $\frac{1}{4}$	21 $\frac{1}{4}$	18 $\frac{1}{4}$
Seven-Column .....	6 $\frac{1}{4}$	2 $\frac{1}{2}$	7	33 $\frac{1}{4}$	27 $\frac{1}{4}$	23 $\frac{1}{4}$	20 $\frac{1}{4}$	17 $\frac{1}{4}$

## Top and Bottom Tappings

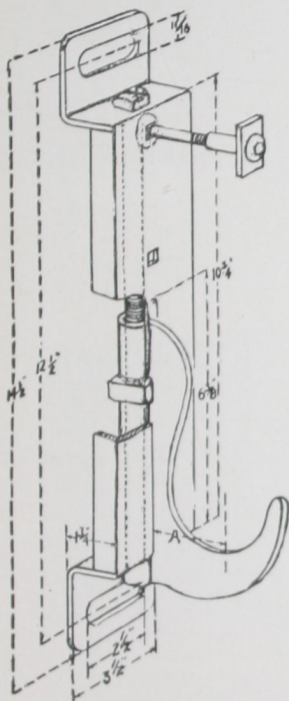
The figures given below indicate the distance between center of upper and lower tappings for top feed and bottom return at same end on all Aero Radiators.

To secure the distance from floor to center of top tapping, add to the following figures, the distance from floor to center of bottom tapping. The distance from the floor to the center of bottom tapping on all radiators, except 16 $\frac{1}{2}$ -inch and 12 $\frac{1}{2}$ -inch seven-column, is 4 $\frac{1}{2}$  inches. The distance from the floor to the center of the bottom tapping on 16 $\frac{1}{2}$ -inch and 12 $\frac{1}{2}$ -inch seven-column is 3 inches.

Height Inches	Three-Column Inches	Five-Column Inches	Seven-Column Inches
36	29 $\frac{1}{4}$	29 $\frac{1}{4}$	29 $\frac{1}{4}$
30	23 $\frac{1}{2}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$
26	19 $\frac{1}{2}$	19 $\frac{1}{2}$	19 $\frac{1}{2}$
23	16 $\frac{1}{2}$	16 $\frac{1}{2}$	16 $\frac{1}{2}$
20	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$
16 $\frac{1}{2}$			11 $\frac{1}{2}$
12 $\frac{1}{2}$			8 $\frac{1}{2}$



# Aero Adjustable Radiator Hanger



With the increasing popularity of the legless type radiator has come a need for an easily installed, effective support. This need has been filled by the Aero pressed steel adjustable radiator hanger.

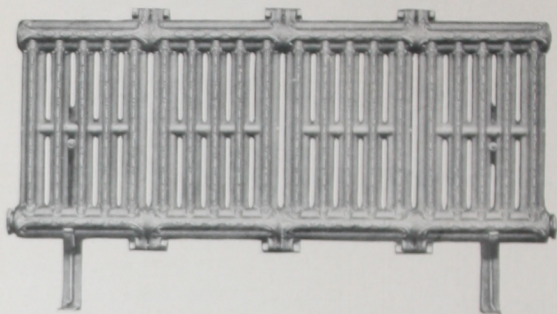
Anchor bolts (furnished with the hanger) are all that is required for securing to the wall. Backing strips are unnecessary, as the radiator is held at a sufficient distance from the wall to permit a free circulation of air. The device is adjustable  $2\frac{1}{2}$  inches horizontally, and 5 inches vertically, which eliminates the necessity for minutely exact measurements in installing. The parts are made of pressed steel.

These hangers are strong, simple, easy to install, and thoroughly effective.

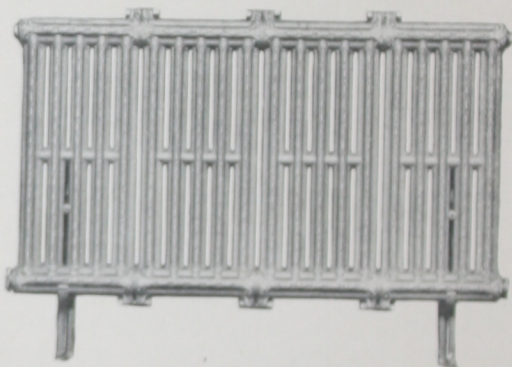
## "A" MEASUREMENTS

3 column.....	$2\frac{17}{32}$ "
5 column.....	$4\frac{9}{32}$ "
7 column.....	6"

## For Steam or Water



Four 20-inch Sections, National Wall Radiator



Four 28-inch Sections, National Wall Radiator

NOTE: The NOVUS WALL RADIATOR is particularly adapted for heating ships and is extensively used for this purpose. Owing to its compact construction and its push nipple joint which permits of increasing or decreasing size of radiators on the job, it has become very popular among shipbuilders.

## Sizes Novus Wall Radiator

High Inches	Wide Inches	Height Including Lugs, Inches	Surface Sq. Ft.
36	12	38	9
28	12	30	7
20	12	22	5

Distance from center to center top and bottom tapping.

20"—17 $\frac{1}{4}$ " center to center

28"—25 $\frac{1}{8}$ " center to center

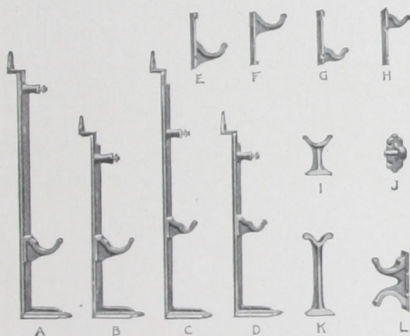
36"—33" center to center

Width of Sections.....3 inches

Distance from Wall to Center of Tapping Wall Brackets.....2 $\frac{3}{4}$  inches

Pedestal Brackets.....3 $\frac{3}{8}$  inches

## Novus Wall Radiator Brackets and Supports



A and C Pedestal Supports are 26 inches high and B and D Pedestal Supports 20 inches high.

A and B both made to support radiator either 4, 6 or 8 inches from floor to center of opening. A for 28-inch and 36-inch sections only; B for 20-inch sections only.

C and D. These supports can only be used for single radiators with bars running horizontally and outlets on bottom side. Distance from floor to bottom of radiator, 8 inches.

E and F. Plain Wall Brackets. E used as bottom bracket. F used as top bracket.

G and H. Can only be used on single sections with bars running horizontally.

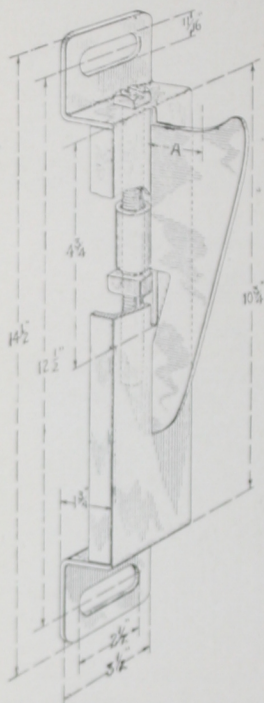
I. Small pedestal support. From floor to center of outlet, 4 $\frac{1}{2}$  inches.

J. Top Bracket to fit into opening on the lug on end sections. Can also be used for bottom brackets on small radiators.

K. Pedestal Support can only be used for single sections with bars running horizontally, distance from floor to bottom of radiator, 7 inches.

L. Special Bracket to be used where one tier of sections is placed above the other.

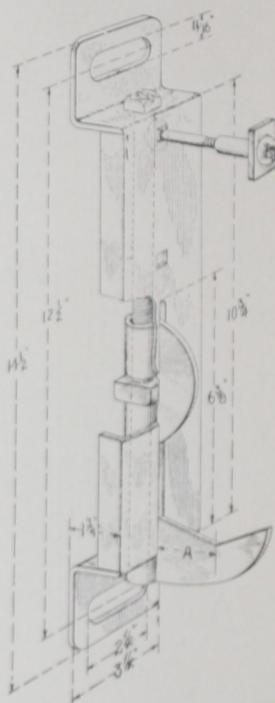
## Adjustable Wall Radiator Hangers



"A" Measurement  
1 1/2 Inch

### TOP HUNG

Type of Hanger for hanging  
single row of Wall Radiator  
from top



"A" Measurement  
1 1/2 Inch

### BOTTOM HUNG

Type of Hanger for hanging  
single and double rows of  
Wall Radiation from  
bottom



# NATIONAL PARTS, SMOKELESS BOILERS

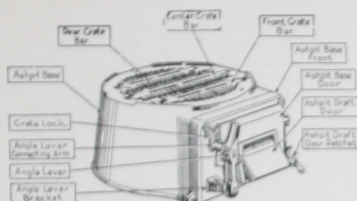
Name of Part	25"	31"	36"	48"
Front Section, Steam or Water.....	\$54.00	\$85.00	\$100.00	\$80.00*
Center Section, Steam or Water.....	54.00	90.00	114.00	87.00*
Tapped Section, Steam or Water.....	57.00	92.00	117.00	89.00*
Uptake Section Second from Back, Steam or Water.....			116.00	88.00*
Uptake Section Next to Back (Tapped) Steam or Water.....	56.00	87.00	116.00	88.00*
Uptake Section Next to Back (Plain) Steam or Water.....				88.00*
Back Section (Plain) Steam or Water.....	62.00	92.00	125.00	
Back Section (Tapped) Steam or Water....				109.00*
Base Front Panel.....	6.75	7.50	9.50	19.50
Base Back Panel.....	5.00	7.50	11.00	13.75
Base Side Panel, 5 Section.....	9.00			
Base Side Panel, 6 Section.....			16.00	19.50
Base Side Panel, 7 Section.....			19.00	24.00
Base Side Panel, 8 Section.....	15.75		22.00	28.50
Base Side Panel, 9 Section.....		18.50	25.00	33.00
Base Side Panel, 10 Section.....		21.00		
Base Extension, 1 Section R.....	2.75	3.00	4.25	5.00
Base Extension, 1 Section L.....	2.75	3.00	4.25	5.00
Base Extension, 2 Section R.....	4.50	5.00	7.50	9.00
Base Extension, 2 Section L.....	4.50	5.00	7.50	9.00
Base Extension, 3 Section R.....	6.00	10.00	10.00	13.00
Base Extension, 3 Section L.....	7.00	12.75	10.00	13.00
Grate Bar, Regular or Pea Coal.....	4.50	6.75	9.75	18.25
Grate Con. Bar, 9 Section (Wrot Iron)....	1.75	2.00	2.25	2.50
Grate Con. Bar, 10 Section (Wrot Iron)....	2.00	2.25	2.50	3.00
Grate Con. Bar, 11 Section (Wrot Iron)....	2.25	2.50	2.75	3.50
Grate Con. Bar, 12 Section (Wrot Iron)....	2.50	3.00	3.25	4.00
Grate Con. Bar, 13 Section (Wrot Iron)....		3.25	3.50	4.25
Grate Con. Bar, 14 Section (Wrot Iron)....			3.50	4.25
Grate Con. Bar, 15 Section (Wrot Iron)....			4.00	4.75
Grate Con. Bar, 16 Section (Wrot Iron)....			4.00	4.75
Grate Con. Bar Guide Post.....		.30	.50	
Grate Lock.....	.15	.15	.25	.25
Angle Lever Link.....	.15	.15	.15	.15
Angle Lever.....	.75	.75	1.00	1.00
Shaker Handle.....	.75	.75	1.00	1.25
Fire Door Frame.....	2.50	2.50	3.25	2.50
Fire Door.....	2.25	2.50	3.75	3.00
Fire Door Liner.....	1.50	1.50	2.00	1.75
Fire Door Slide.....	.25	.25	.30	.25
Fire Door Slide Knob.....	.10	.10	.10	.10
Ashpit Door.....	1.50	2.00	3.00	3.00
Ashpit Draft Door (Front).....	.75	.75	.75	.75
Base Side Draft Door.....	1.50	1.50	2.50	2.50
Draft Door Ratchets, each.....	.15	.15	.15	.15
Base Side Draft Door Lugs, each.....	.15	.15	.15	.15
Rear Base Cleanout Door.....	2.50	.250	.250	2.50
Rear Base Cleanout Door Liner.....	1.75	1.75	1.75	1.75
Base Side Cleanout Door Frame.....	.75	.75	.75	.75
Base Side Cleanout Door.....	.75	.75	.75	.75
Cleanout Door Frame, Upper.....	2.25	2.50	3.00	4.50
Cleanout Door, Upper.....	1.75	2.50	3.75	6.00
Cleanout Door Liner, Upper.....	1.25	1.25	1.75	3.25
Cleanout Door Frame, Lower.....		1.00	1.50	2.75
Cleanout Door, Lower.....		1.00	1.00	2.00

\*48 Series Sections list price for each half.

# NATIONAL PARTS, SMOKELESS BOILERS

Name of Part	25"	31"	36"	48"
Clinker Door Frame.....	\$1.25	\$ .75	\$2.00	\$2.50
Clinker Door.....	.75	.75	1.50	1.75
Clinker Door Liner.....	.50	.50	.75	1.50
Outside Coil Opening Cover.....	.25	.25	.25	.50
Inside Coil Opening Cover.....	.15	.15	.15	.15
Smokehood Casting.....	6.75	7.00	12.25	15.00
Smokehood Turn Damper.....	1.00	1.50	2.50	2.75
Slotted Damper Trunnion.....	.25	.25	.25	.25
Solid Damper Trunnion.....	.15	.15	.15	.15
Smokehood Check Draft Door Frame.....	.75	1.25	1.50	2.50
Smokehood Check Draft Door.....	.30	1.00	1.00	1.00
Smokehood Check Draft Door Ratchet.....	.15	.15	.15	.15
Top Front Damper Control Bracket.....	.50	.50	.50	.50
Bottom Front Damper Control Bracket.....	.50	.50	.50	.50
Top Rear Damper Control Bracket.....	.50	.50	.50	.50
Bottom Rear Damper Control Bracket.....	.50	.50	.50	.50
Damper Rod Handle or Pull.....	.50	.50	.50	.50
Damper Rod Knuckle.....	.40	.40	.40	.40
Damper Lever.....	.25	.25	.25	.25
Long Damper Rod (Wrot Iron).....	.50	.75	1.00	1.25
Short Damper Rod (Wrot Iron).....	.30	.30	.40	.50
Top Nipples, each.....	4" .60	6" .70	6" .70	6" .70
Bottom Nipples, each.....	3" .60	4" .60	4" .60	4" .60
Front Bridgwall Panel.....	6.25	7.00	14.25	19.50
Back Bridgwall Panel.....	6.50	8.25	12.25	15.50
Bridgwall Protecting Plate.....	6.25	8.00	10.25	17.75
Brick Carrier.....	5.50	9.00	10.50	12.75
Baffle Plates, each.....	.30	.80	1.50	.75
Draft Box.....	4.25	9.50	9.75	14.00
Draft Damper Frame.....	1.75	1.75	1.75	1.75
Draft Box Damper.....	.50	.50	.50	.50
Draft Box Dial.....	.50	.50	.50	.50
Draft Box Dial Hand.....	.15	.15	.15	.15
Draft Rod Bracket.....	.15	.15	.15	.15
Draft Box Damper Rod (Wrot Iron).....	.75	.75	1.00	1.25
Outside Cap Brick, No. 1, each.....	.50	.....	.....	.....
Center Cap Brick, No. 2, each.....	.50	.....	.....	.....
Center Brick, No. 3, each.....	.50	.....	.....	.....
Cap Brick, No. 4, each.....	.....	.50	.50	.50
Center Brick, No. 5, each.....	.....	.50	.50	.50
Split Brick, each.....	.....	.15	.....	.15
Flue Brush Handle.....	1.00	1.25	1.50	2.00
Poker.....	1.75	2.50	3.00	3.50
Hoe and Handle.....	1.75	2.00	2.50	3.00
Scraper and Handle (Combustion Chamber).....	1.00	1.00	1.25	1.25
Draw Rods, 9 Section.....	2.75	3.50	4.00	8.50
Draw Rods, 10 Section.....	3.00	3.75	4.50	9.50
Draw Rods, 11 Section.....	3.25	4.00	5.00	10.50
Draw Rods, 12 Section.....	3.50	4.25	5.50	11.50
Draw Rods, 13 Section.....	.....	4.50	6.00	12.50
Draw Rods, 14 Section.....	.....	.....	6.50	13.50
Draw Rods, 15 Section.....	.....	.....	7.00	14.50
Draw Rods, 16 Section.....	.....	.....	7.50	15.50

# NATIONAL PARTS, ACME BOILERS

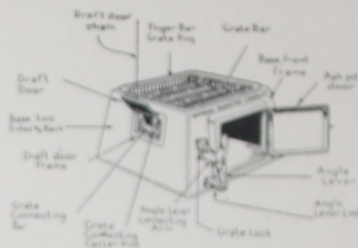


Note: Angle Lever Connecting Arm connects to Grate Connecting Bar which connects Grate Bars inside of base

Name of Part	17"	19"	22"	25"
Firepot Section (open) .....	\$34.00	\$41.00	\$47.00	\$63.00
Center Section (first above firepot) .....	12.00	13.00	16.00	20.00
*Center Section (second above firepot) .....	11.00	12.00	15.00	19.00
Center Section (third above firepot) .....	11.00	12.00	15.00	19.00
Steam Dome .....	18.00	20.00	24.00	33.00
Water Dome .....	13.00	16.00	20.00	25.00
†Base Complete .....	20.00	22.00	29.00	32.00
Base Casting only .....	12.00	13.00	18.00	19.00
Base Front Frame .....	2.00	2.00	2.00	2.00
Ashpit Door .....	1.25	1.25	1.50	1.50
Ashpit Draft Door .....	.50	.50	.60	.60
Ashpit Draft Door Ratchet .....	.15	.15	.15	.15
Angle Lever .....	.50	.50	.50	.50
Angle Lever Link .....	.20	.20	.20	.20
Shaker Handle .....	.80	.80	.80	.80
Front Grate Bar .....	1.00	1.25	1.25	1.75
Center Grate Bar .....	1.50	1.75	.....	.....
Front Center Grate Bar .....	.....	.....	1.75	2.25
Rear Center Grate Bar .....	.....	.....	1.75	2.25
Back Grate Bar .....	1.00	1.25	1.25	1.75
Grate Connecting Bar .....	.40	.50	.60	.60
Angle Lever Connecting Arm .....	.40	.40	.40	.50
Grate Lock .....	.15	.15	.15	.15
Fire Door .....	1.25	1.25	1.50	1.50
Fire Door Frame .....	1.50	1.50	1.75	1.75
Fire Door Liner .....	.60	.60	.60	.60
Fire Door Slide .....	.25	.25	.25	.25
Fire Door Slide Knob .....	.10	.10	.10	.10
Cleanout Door .....	.30	.30	.30	.30
Top Cleanout Door Frame (water) .....	.50	.50	.50	.50
Cleanout Door Frame .....	.50	.50	.50	.50
Clinker Door .....	.30	.30	.30	.30
Clinker Door Frame .....	.40	.40	.50	.50
Outside Cover for Coil Opening .....	.15	.15	.15	.15
Inside Cover for Coil Opening .....	.10	.10	.10	.10
Smoke Elbow Casting only .....	1.50	1.75	2.25	2.50
Smoke Elbow Turn Damper .....	.25	.30	.40	.50
Smoke Elbow Turn Damper Handle .....	.15	.15	.15	.15
Check Draft Door .....	.30	.30	.30	.30
Check Draft Door Frame .....	.40	.40	.40	.50
Check Draft Door Ratchet .....	.15	.15	.15	.15
Nipples, each .....	3" .60	3" .60	4" .60	4" .60
Flue Brush Handle .....	.75	.75	.75	.75
Poker .....	.75	.75	.75	.75
Scraper .....	.40	.40	.40	.40
Section Rods (No. 1 Series) .....	.75	.75	.75	.75
Section Rods (No. 2 Series) .....	1.00	1.00	1.00	1.00
Section Rods (No. 3 Series) .....	1.25	1.25	1.25	1.25
Section Rods (No. 4 Series) .....	.....	.....	.....	1.75

\*The same Center Section is used as the second and fourth above firepot on the 25" size. †Everything below the firepot when Boiler is completely assembled.

# NATIONAL PARTS, UPRIGHT BOILERS



Name of Part	Series of Boiler			
	30 or 300	40 or 400	50 or 500	60 or 600
Base (two sides and back).....	\$15.75	\$16.25	\$19.00	\$24.25
Base Front Frame (front only).....	4.75	4.75	6.25	6.25
Draft Door Ratchet.....	.15	.15	.15	.15
Draft Door Frame.....	.50	.50	.60	.60
Draft Door.....	.50	.50	.60	.60
Ashpit Door.....	1.75	1.75	2.50	2.50
Grate Lock.....	.15	.15	.15	.15
Finger Bar Grate Ring.....	7.50	9.00	10.00	11.50
Grate Bar, Regular.....	2.25	2.25	3.00	3.00
Grate Bar, Pea Coal.....	2.50	2.50	3.50	3.50
Grate Connecting Bar.....	.90	1.00	1.00	1.25
Angle Lever Connecting Arm.....	.80	.80	.80	.80
Angle Lever.....	.50	.50	.50	.50
Angle Lever Link.....	.15	.15	.15	.15
Shaker Handle.....	.80	.80	.80	.80
1st Firepot Section (bottom).....	25.00	32.00	40.00	44.00
2nd Firepot Section (middle).....	25.00	30.00	36.00	38.00
3rd Firepot Section (old top).....	26.00	34.00	41.00	48.00
3rd Firepot Section (new top).....	27.00	35.00	42.00	50.00
Center Section (first above firepot).....	20.00	25.00	32.00	37.00
Center Section (second above firepot).....	20.00	25.00	32.00	37.00
Steam Dome.....	35.00	45.00	55.00	60.00
Water Dome.....	22.00	30.00	38.00	44.00
Smokehood Casting.....	3.00	3.00	3.75	3.75
Check Draft Door Frame.....	.50	.50	.60	.60
Check Draft Door.....	.30	.30	.40	.40
Check Draft Door Ratchet.....	.15	.15	.15	.15
Smokehood Damper.....	.50	.50	.75	.75
Smokehood Damper Ring.....	.50	.50	.60	.60
Smokehood Damper Handle.....	.15	.15	.15	.15
Cleanout Door Frame.....	.40	.40	.50	.50
Cleanout Door.....	.25	.25	.40	.40
Fire Door Frame.....	1.00	1.00	1.25	1.25
Fire Door.....	1.50	1.50	2.00	2.00
Fire Door Lining.....	.75	.75	1.00	1.00
Fire Door Draft Slide.....	.25	.25	.25	.25
Clinker Door Frame.....	.60	.60	.70	.70
Clinker Door.....	.40	.40	.50	.50
Clinker Door Protecting Plate.....	.30	.30	.40	.40
Cover for Coil Openings (per pair).....	.10	.10	.10	.10
Nipple.....	1.00	1.00	1.50	1.50
Flue Brush Handle.....	.75	.75	.75	.75
Poker.....	.75	.75	.75	.75
Scraper.....	.30	.30	.30	.30
Section Rods (No. 0 Series).....	.75	.75	.75	.75
Section Rods (No. 1 Series).....	1.00	1.00	1.00	1.00
Section Rods (No. 2 Series).....	1.25	1.25	1.25	1.25



# NATIONAL PARTS, SECTIONAL BOILERS

Name of Part	20" ‡	25" °	31"	36"	48"
Front Section, Steam or Water	\$28.00	\$54.00	\$85.00	\$100.00	\$80.00*
Center Section, Steam or Water	24.00	54.00	90.00	114.00	87.00*
Tapped Section, Steam or Water	26.00	57.00	92.00	117.00	89.00*
Next to Back Section, Steam or Water	25.00	56.00	87.00	116.00	88.00*
Back Section, Steam or Water (Plain)	36.00	62.00	92.00	125.00	
Back Section, Steam or Water (Tapped)					109.00*
Base Front Panel	2.25	6.75	7.50	9.50	19.50
Base Back Panel	3.75	6.25	8.00	11.00	20.25
Base Side Panel, 5 Section	5.50	9.00	9.50	13.00	15.00
Base Side Panel, 6 Section	6.75	11.25	11.75	16.00	19.50
Base Side Panel, 7 Section	8.00	13.50	14.00	19.00	24.00
Base Side Panel, 8 Section		15.75	16.25	22.00	28.50
Base Side Panel, 9 Section			18.50	25.00	33.00
Base Extension, 1 Section, R. or L.	1.75	2.75	3.00	4.25	5.00
Base Extension, 2 Section, R. or L.		4.50	5.00	7.50	9.00
Grate Bar, Regular or Pea Coal	2.50	4.50	6.75	9.75	18.25
Grate Con. Bar, 5 Section (Wrot Iron)	.75	1.50	1.75	1.75	2.25
Grate Con. Bar, 6 Section (Wrot Iron)	.75	1.75	2.00	2.00	2.50
Grate Con. Bar, 7 Section (Wrot Iron)	1.00	2.00	2.25	2.50	3.00
Grate Con. Bar, 8 Section (Wrot Iron)		2.25	2.50	2.75	3.50
Grate Con. Bar, 9 Section (Wrot Iron)			3.00	3.25	4.00
Grate Con. Bar, 10 Section (Wrot Iron)				3.50	4.25
Grate Con. Bar, 11 Section (Wrot Iron)					4.75
Grate Connecting Bar Guide Post			.30	.50	
Grate Lock	.15	.15	.15	.25	.25
Angle Lever Link	.15	.15	.15	.15	.15
Angle Lever	.50	.75	.75	1.00	1.00
Shaker Handle	.75	.75	.75	1.00	1.25
Fire Door Frame	1.50	2.50	2.50	3.25	2.50
Fire Door	2.00	2.25	2.50	3.75	3.00
Fire Door Liner	.50	1.50	1.50	2.00	1.75
Fire Door Slide and Knob	.25	.25	.25	.30	.25
Ashpit Door	1.50	1.50	2.00	3.00	3.00
Ashpit Draft Door Frame	.30				
Ashpit Draft Door	.30	.75	.75	.75	.75
Ashpit Door Slide	.15				
Ashpit Draft Door Ratchet	.15	.15	.15	.15	.15
Cleanout Door Frame, Upper	.75	2.25	2.50	3.00	4.50
Cleanout Door, Upper	1.00	1.75	2.50	3.75	6.00
Cleanout Door Liner, Upper	.50	1.25	1.25	1.75	3.25
Cleanout Door Frame, Lower		.30	1.00	1.50	2.75
Cleanout Door, Lower		.30	1.00	1.00	2.00
Clinker Door Frame	1.25	1.25	.75	2.00	2.50
Clinker Door	.75	.75	.75	1.50	1.75
Clinker Door Liner	.50	.50	.50	.75	1.50
Outside Coil Opening Cover	.25	.25	.25	.25	.50
Inside Coil Opening Cover	.15	.15	.15	.15	.15
Smokehood	4.75	6.75	7.00	12.25	15.00
Smokehood Turn Damper	.75	1.00	1.50	2.50	2.75
Smokehood Turn Damper Handle	.15				
Smokehood Turn Damper Ratchet	.15				
Slotted Damper Trunnion		.25	.25	.25	
Solid Damper Trunnion		.15	.15	.15	
Smokehood Check Draft Door Frame	.50	.75	1.25	1.50	2.50
Smokehood Check Draft Door	.30	.30	1.00	1.00	1.00
Smokehood Check Draft Door Ratchet	.15	.15	.15	.15	.15
Top Front Damper Control Bracket	.50	.50	.50	.50	.50
Bottom Front Damper Control Bracket	.50	.50	.50	.50	.50
Top Rear Damper Control Bracket	.50	.50	.50	.50	.50
Bottom Rear Damper Control Bracket	.50	.50	.50	.50	.50
Damper Rod Handle, or Pull		.50	.50	.50	.50
Damper Rod Knuckle		.40	.40	.40	.40
Damper Lever		.25	.25	.25	.25
Long Damper Rod		.50	.75	1.00	1.25
Short Damper Rod		.30	.30	.40	.50
Top Nipples, each	4" .60	4" .60	6" .70	6" .70	6" .70
Bottom Nipples, each	2½" .60	3" .60	4" .60	4" .60	4" .60
Flue Brush Handle	1.00	1.00	1.25	1.25	2.00
Poker	1.50	1.75	2.50	3.00	3.50
Hoe and Handle	1.50	1.75	2.00	2.50	3.00
Draw Rods, 5 Section	1.25	2.25			
Draw Rods, 6 Section	1.50	2.50	2.75	3.25	5.50
Draw Rods, 7 Section	1.75	2.75	3.00	3.50	6.50
Draw Rods, 8 Section		3.00	3.25	3.75	7.50
Draw Rods, 9 Section			3.50	4.00	8.50
Draw Rods, 10 Section				4.25	9.50
Draw Rods, 11 Section					10.50

\*48 Ser. Sec. list price for each half. °Formerly 24-inch. ‡Formerly 21-inch.

## Laundry Type

### NOVUS No. 1

Name of Part			Name of Part		
Firepot.....		\$10.00	Ashpit Door.....	N1- 9-T	\$0.50
Top Frame.....	N1-1-T	3.25	Base Bottom Plate.....	N1-10-T	2.25
Top Front Plate.....	N1-2-T	.30	Base Casting.....	N1-11-T	3.75
Top Back Plate.....	N1-3-T	.30	Cross Lid.....	N1-12-T	.40
Feed Door.....	N1-4-T	.50	Damper.....	N1-13-T	.15
Baffle Plate.....	N1-5-T	.40	Smoke Collar.....	N1-14-T	.30
Slide Center Grate.....	N1-6-T	.30	Lids, each.....	N1-15-T	.50
Outside Grate.....			Base Legs, each.....	LH-16	.25
(Slide C.T.).....	N1-7-T	.75	Shaker and Lifter.....	No. 42	.25
Ashpit Draft Door.....	N1-8-T	.15	Hinges.....		.15

### SERIES "B"

Name of Part	No. 10-B	No. 12-B	No. 14-B
Firepot.....	\$15.00	\$20.00	\$25.00
Top Ring.....	2.25	2.25	2.50
Top Frame.....	2.00	2.00	4.00
Lid.....	.60	.60	.60
Combination Lifter and Shaker.....	.25	.25	.25
Feed Door.....	.40	.40	.....
Feed Door Handle (Wire).....	.15	.15	.....
Base Casting.....	3.75	5.25	9.50
Base Bottom Plate.....	2.25	2.00	3.00
Base Legs, each.....	.25	.25	.25
Ashpit Door.....	.50	.50	.75
Ashpit Draft Door.....	.15	.15	.15
Ashpit Door Slide.....	.....	.15	.15
Ashpit Door Slide Knob.....	.....	.10	.10
Outside Grate (Slide Center Type).....	.75	.....	.....
Slide Center Grate.....	.30	.....	.....
Center Grate Bar.....	.....	.....	.90
Outside Grate Bars, each.....	.....	.90	.60
Grate Connecting Bar.....	.....	.30	.30
Shaker Handle Bracket.....	.....	.15	.15
Shaker Handle.....	.....	.20	.20

## Smoke Dome Type

Name of Part	No. 106	No. 107A	No. 112	No. 114	No. 116
Firepot.....	\$12.00	\$17.00	\$25.00	\$34.00	\$44.00
Smoke Dome.....	1.25	1.25	2.00	2.50	5.50
Smoke Dome Door.....	.....	.....	.....	.....	.30
Smoke Dome Door Ratchet.....	.....	.....	.....	.....	.15
Smoke Dome Slide.....	.20	.20	.15	.15	.....
Fire Door Frame.....	.60	.60	1.00	1.20	1.50
Fire Door.....	.50	.50	.50	.60	1.00
Fire Door Liner.....	.....	.....	.....	.....	.60
Fire Door Slide.....	.15	.15	.15	.15	.25
Fire Door Slide Knob.....	.10	.10	.10	.10	.10
Clinker Door Frame.....	.....	.50	.30	.30	.40
Clinker Door.....	.....	.20	.30	.30	.30
Outside Coil Opening Cover.....	.....	.....	.....	.....	.15
Inside Coil Opening Cover.....	.....	.....	.....	.....	.15
Base Casting.....	4.00	4.00	5.25	9.50	11.00
Base Bottom Plate.....	2.10	2.10	2.00	3.00	.....
Base Legs, each.....	.25	.25	.25	.25	.....
Base Front Frame.....	.....	.....	.....	.....	1.50
Ashpit Door.....	.50	.50	.50	.75	1.00
Ashpit Door Slide.....	.15	.15	.15	.15	.....
Ashpit Door Slide Knob.....	.10	.10	.10	.10	.....
Ashpit Draft Door.....	.15	.15	.15	.15	.50
Ashpit Draft Door Ratchet.....	.....	.....	.....	.....	.15
Center Grate Bar.....	.....	.....	.....	.90	1.50
Outside Grate Bars, each.....	.....	.....	.90	.60	.....
Grate Connecting Bar.....	.....	.....	.30	.30	.30
Slide Center Grate.....	.30	.30	.....	.....	.....
Outside Grate (Slide Center Type).....	1.00	1.00	.....	.....	.....
Grate Supports, each.....	.15	.15	.....	.....	.....
Front Grate Bar.....	.....	.....	.....	.....	1.00
Back Grate Bar.....	.....	.....	.....	.....	1.00
Angle Lever Connecting Arm.....	.....	.....	.....	.....	.30
Grate Lock.....	.....	.....	.....	.....	.15
Angle Lever.....	.....	.....	.....	.....	.75
Shaker Handle.....	.....	.....	.30	.30	.75
Shaker Handle Bracket.....	.....	.....	.15	.15	.....
Comb. Lifter and Shaker.....	.25	.25	.....	.....	.....
Poker.....	.....	.....	.....	.....	.75
Scraper.....	.....	.....	.....	.....	.30
Shaker Handle Bracket.....	.....	.....	.15	.15	.....

# NATIONAL PARTS, RADIUM BOILERS

## No. 1 SERIES

## No. 2 SERIES

Name of Part	Smokehood	Burner Door	Base Back Panel	Base Front Panel	Burner Manifold	Burner Rest	Steam Dome	Smokehood	Burner Door	Base Back Panel	Base Front Panel	Burner Manifold	Burner Rest
4" Sec.	.90	.60	1.20	.70	.60	.15	5.25	1.50	1.20	2.10	1.60	.90	.20
5" Sec.	1.30	.80	1.50	.90	.70	.15	6.50	2.00	1.60	2.70	2.00	1.10	.25
6" Sec.	1.70	1.00	1.80	1.10	.80	.15	9.00	2.50	2.00	3.30	2.40	1.20	.30
7" Sec.	2.10	1.20	2.10	1.30	.90	.20	9.50	3.00	2.40	3.90	2.80	1.30	.35
8" Sec.							10.50	3.50	2.80	4.50	3.20	1.40	.40
9" Sec.							11.75	4.00	3.20	5.10	3.60	1.50	.45
10" Sec.							14.25	4.50	3.60	5.70	4.00	1.60	.50
11" Sec.							15.00	5.00	4.00	6.30	4.40	1.70	.55
12" Sec.							15.75	5.50	4.40	6.90	4.80	1.80	.60
13" Sec.							17.00	6.00				1.90	.65
14" Sec.							19.50	6.50				2.00	.70
15" Sec.							20.00	7.00				2.10	.75
16" Sec.							21.00	7.50				2.20	.80
17" Sec.							22.25	8.00				2.30	.85
18" Sec.							24.75	8.50				2.40	.90
19" Sec.							25.25	9.00				2.50	.95
20" Sec.							26.25	9.50				2.60	1.00

Over 12 Secs. Special Doors.  
List Price .50 per Sec.

Over 12 Secs. Special Panels.  
List Price .25 per Sec.

Over 12 Secs. Special Panels.  
List Price .50 per Sec.

Over 12 Secs. Special Panels.  
List Price .50 per Sec.

Over 12 Secs. Special Panels.  
List Price .50 per Sec.

Over 12 Secs. Special Panels.  
List Price .50 per Sec.

Over 12 Secs. Special Panels.  
List Price .50 per Sec.

	No. 1 Series	No. 2 Series
Right Base End Panel	\$2.25	\$5.50
Left Base End Panel	2.25	5.50
Burners, each	1.00	1.25
Burner Pipes, each		.25
Burner Pipe Elbows, each		.15
Burner Pipe Nipples, each		.15
Air Mixers, each	.30	.30
Gas Cocks, each	.75	.75
Door Handles, each	.15	.15
2 x 1/4 Nipples (Steam Dome), each		.50
4 x 1 Nipples (Steam Dome), each		.75
Flanges (Steam Dome), each		.60
Asbestos Gaskets (Steam Dome), each		.75
Smokehood Damper Slide	.25	
Draft Hood		2.25
Right End Section	6.00	15.00
Left End Section	7.00	22.00
Center Section	7.00	22.00
Tapped Center Section		23.00
Center Section (with Header Tapping)		23.00
Top Nipples	2" .60	2" .60
Bottom Nipples	2" .60	2" .60



## STEAM TRIMMINGS

*Water Column Casting (Acme Type).....	\$1.50
Pipe and Pipe Fittings for Water Column (Acme Type).....	2.50
xSet 3/4-inch Gauge Cocks, complete with Glass and Guards.....	3.00
Set 1/2-inch Gauge Cocks, complete with Glass and Guards.....	3.50
3/4-inch Try-Cocks, each.....	.90
1/2-inch Try-Cocks, each.....	1.15
Steam Gauge Siphon.....	.20
All-Metal Damper Regulator, complete (See Specialties Sheet for Price).	
xxNovus Steam Gauge (See Specialties Sheet for Price).	
Pop Safety Valves are furnished with all Steam Boilers.	
1-inch Valve on 30 Series Novus Upright and 17-inch, 19-inch and 22-inch Acme.	
1 1/4-inch Valve on 40 Series Novus Upright, 5 Section, 20 Series Sectional, 4 to 6 Section Radium and 25-inch Acme.	
1 1/2-inch Valve on 50 and 60 Series Novus Upright, 6 and 7 Section, 20 Series Sectional and 7 to 9 Section Radium.	
2-inch Valve on 25 Series Sectional, 9 Section, 25 Series Smokeless and 10 to 15 Section Radium.	
2 1/2-inch Valve on 31 Series and 6 Section, 36 Series Sectional; 10 to 12 Section, 25 and 9 Section 31 Series Smokeless; 16 to 20 Section Radium.	
3-inch Valve on 7 to 10 Section, 36 Series Sectional and 10 and 11 Section, 31 Series Smokeless.	
3 1/2-inch Valve on 12 and 13 Section, 31 Series and 10 and 11 Section, 36 Series Smokeless.	
4-inch Valve on 12, 13 and 14 Section, 36 Series Smokeless.	
4 1/2-inch Valve on 15 and 16 Section, 36 Series Smokeless.	
Two 2 1/2-inch Valves on 6 and 7 Section and Two 3-inch Valves on 8 and 9 section, 48 Series Sectional; one 3-inch and one 3 1/2-inch Valve on 10 and 11 Section Sectional and 9 Section Smokeless, 48 Series; one 3-inch and one 4-inch Valve on 10 and 11 Section; one 3 1/2-inch and one 4-inch Valve on 12 Section, two 4-inch Valves on 13 and 14 Section and one 4-inch and one 4 1/2-inch Valve on 15 and 16 Section, 48 Series Smokeless.	
(See Specialties Sheet for Price on Safety Valves)	
Large Novus Flue Brush supplied with 31, 36 and 48 Series Sectional and Smokeless.	
Medium Novus Flue Brush supplied with all other Boilers.	
(See Specialties Sheet for price of Flue Brushes)	

## LIST PRICE OF PARTS TO INCREASE BOILER ONE SIZE

Novus Sectional	Steam or Water	National Smokeless	Steam or Water
20-Inch.....	\$ 41.00	25-Inch.....	\$ 79.00
25-Inch.....	79.00	31-Inch.....	123.00
31-Inch.....	123.00	36-Inch.....	150.00
36-Inch.....	150.00	48-Inch.....	233.00
48-Inch.....	233.00		
Novus Upright	Steam or Water	Acme Round	Steam or Water
30 Series.....	\$23.00	17-Inch.....	\$14.00
40 Series.....	28.00	19-Inch.....	16.00
50 Series.....	36.00	22-Inch.....	18.00
60 Series.....	41.00	25-Inch.....	23.00

\*All Novus Upright, Novus Sectional and Smokeless Boilers have Water Column cast on Section.

x3/4-inch trimmings used on Acme, Radium, 20, 25 and 31 Series Sectional and Smokeless Boilers; 1/2-inch Trimmings used on Novus Upright, 36 and 48 Series Sectional and Smokeless.

xx3 1/2-inch Steam Gauge used on Acme, Radium and Novus Upright; 4 1/2-inch Steam Gauge on Sectional and Smokeless.

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# NATIONAL

Boilers and Radiators



NATIONAL RADIATOR COMPANY